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Textile World

SEPTEMBER 1940

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TEXTILE WORLD (formerly *Textile World Journal*) with which are combined *Textiles*, *Fosselt's Textile Journal* and *Textile Advance News*. Published monthly. United States and Possessions, Canada and Latin American Republics, $1.50 per year; all other countries, $2, U. S. currency or 12 shillings. Single copy 25c. Annual index appears in "Textile World Yearbook & Catalog."

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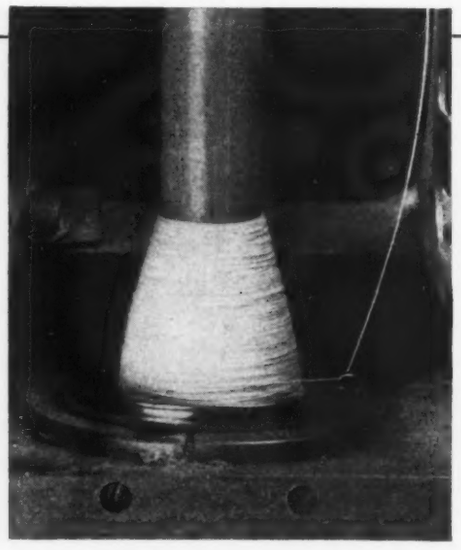
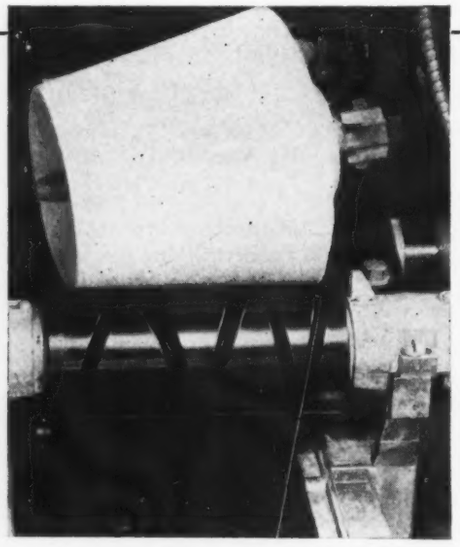
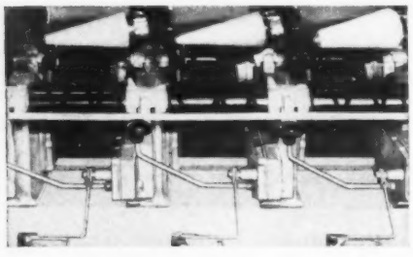
On the Roto-Coner*, the revolving motion of the Rotating Traverse (B below) is in the same direction the yarn is traveling, which is particularly advantageous for spun rayon yarns. The stroboscopic pictures at right illustrate how the yarn, traveling at 500 yards per minute, is gently guided onto the package by the grooves in the roll.



A. Yarn traveling *down* to spinning bobbin

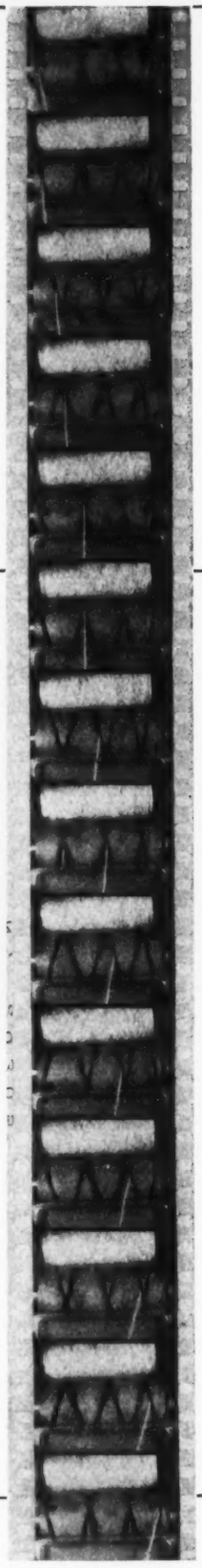


B. Yarn traveling *up* to winding package



Exceptional ease of cleaning—due to the streamlined design—makes the Roto-Coner* ideal for producing open-wind cones of spun rayon yarn. There are few surfaces where lint can accumulate—so cleaning with a hand brush is only a matter of a few seconds. This is especially important when handling both viscose and acetate yarns.

The pictures in the strip at right were taken by a stroboscopic camera geared to the Rotating Traverse and photographing 25,000 pictures per minute.



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CHALLENGE TO INDUSTRY'S PATRIOTISM

Calls for Plain Speaking

IT is a pity that the greatest national defense effort in American history had to be made during a presidential election campaign. For a modern defense effort involves an intensely practical industrial project, while an election campaign involves an intensely emotional political propaganda. And those two don't mix.

That, as I see it, is the chief reason for the welter of claims and denials, charges and counter-charges that have been getting in the way of contracts for planes, tanks, guns and all the rest of the armament for which the American people are so nervously peering down the road.

We are told that the managers of industry, smarting and suspicious under the repeated attacks of government officials for some years back, have been reluctant to assume the abnormal risks of defense contracts without commensurate safeguards, and that the politicians who must authorize those safeguards have been reluctant to do anything that might be construed as letting down the bars for unscrupulous business men to exploit the national emergency. For the one, the business risks of full speed ahead have been too great; for the other, the political risks of full speed ahead have been too great. So we don't go full speed ahead.

This is not written to increase that clamor of recrimination on either side. On the contrary, it is an appeal for some decent and thoughtful consideration on the part of all concerned—consideration for the urgent needs of the nation, for the problems and responsibilities of both the politicians and the industrialists, for the elementary principles of prudent business management, and for the good opinion of the man on the street. He is neither a politician nor an industrial executive. But his hide and his pocketbook are at stake in the national defense program—and he knows it. He has a right to the low-down on what is going on. And if he is left in ignorance or deliberately deceived, for the sake of either political or business whoopee, the payoff will be mighty poisonous political medicine for the politicians and equally poisonous business medicine for the business men who may be responsible.

* * *

The plain stark fact, to be faced squarely by us all, is that the national defense program is an emergency project—a desperately urgent emergency project.

As in every emergency that confronts a democracy, we are harassed by a confusion of counsel. As always, some of the confusion arises from honest but conflicting judgments, some of it from ignorance or muddy thinking. But, unhappily, much of it reflects the deliberate purpose of self-seekers to fish in troubled waters—to capitalize the conjunction of a national emergency and a political campaign to boost their own interests. Already the charge that American business men are unpatriotic and interested only in profit has been put out as a smokescreen to cover up deficiencies for which business men are in no way responsible.

Now the man on the street finds it hard to see through this maze of excited contradiction. Not because he isn't smart—the average American can think straight enough *when he has the facts.* But in this case the facts are obscure and complicated—they have to do with matters that are strange to him. And to make it worse, at the height of his confusion, raucous voices constantly assail his ear with "simple" explanations of it all. But, as so often happens, most of these "simple" explanations make the matter a lot simpler than it really is.

* * *

Consider, for example, the cry that "industry refuses to get busy on national defense until its profits are guaranteed". Very clear and simple, to be sure; but also very false. The charge that American capital is "on strike" in the hour of national need. As silly as it is simple. The assertion that our manufacturers "won't even talk with a government anxious to place orders with them, without large financial concessions", and that "American corporate industry refuses to expand its resources for defense until it receives immunity from proper taxation". The resounding demand that we "conscript wealth as well as men"—whatever that may mean.

Particularly political has been the attack on the aircraft industry. It has been made to appear that aircraft manufacturers were instituting a sit-down strike because, in their greed for profits, they demanded more than 8%. Actually the 8% was not a net profit at all and the only concern of the manufacturers was to fight against incurring losses under the 8% limitation. And army and navy officers have sustained the aircraft manufacturers' viewpoint.

The air is full of explanations which, however simple they may sound, do not explain. And in most cases, I am convinced, the purpose of those who offer them is not to explain but to inflame. Those who try honestly to explain these issues from either side, find it impossible to do the job in such ringing phrases.

As I have said, our country has been caught short. As

a result, there are many reasons for the confusion and controversy. The plain fact is that we can produce our war equipment by only two means: (1) by converting the industries of peace into the industries of war, so far as that is possible; and (2) by building from scratch the new facilities we need to supplement them. In other words, we must create—with desperate haste—a new industry in America—an armament industry.

Right there is the crux of the problem that now confronts the industrialist sincerely trying to equip himself for his part in national defense. For this new armament industry is not the ordinary business risk against which he has learned to weigh the interests of his employees and his stockholders. It does not deal with familiar products and processes. It is not continuous—at least it has not been heretofore in this country—and it may fold up as suddenly as it has opened. It cannot hope to serve thousands of potential customers: it has but one sure customer—the United States Government—and wielding the sovereign power that customer can do just about as it pleases with respect to its needs and demands. Which means that not even this one is a *sure* customer.

* * *

No more unfair or deceptive charge ever has been leveled against American industry and American business men than the accusation of being unwilling to take the normal business risks of the defense program. The risks they are trying to minimize—they cannot possibly avoid them all—are very special and extraordinary risks indeed. So clearly is that true, that I doubt very much whether such questions and charges ever would have risen were it not for the fact we are engaged in a political campaign.

Already some of industry's great units have gone ahead with the building of new facilities, the purchase of special materials, and the actual production of armament in the face of all risks, gambling that their government eventually would work out some reasonable plan to protect them against excessive loss. Others, doubtless will follow suit.

But many other companies, for one reason or another, are not in position to do that. So before they begin to expand their facilities to handle defense contracts, they have asked their *only potential customer for those new facilities* to guarantee them—*not* excessive prices, *not* exorbitant profits, *not* immunity from taxation, as we are being told, but simply against the excessive losses that may result from very extraordinary conditions.

* * *

As this is written, it looks as though the legislation and the rulings necessary to accomplish this purpose soon will be forthcoming. Thoughtful and responsible officials of the government understand the situation and what is needed. But, unfortunately, their understanding and action will not quiet the professional business-baiters. So long as those gentlemen have their own interests to serve, so long as political excitement makes it easy to whip up public demand for a scapegoat to atone for disappointing progress with the defense program—just so long will the business-baiters find a receptive audience for their criticisms.

All of which suggests that business men must carry at this time a double responsibility, in addition to their obvious obligation to do the very best job they know how on their individual parts of the defense program.

The first of these added responsibilities is, of course, to avoid any possible basis for the charge that industry is exploiting the defense program in behalf of excessive profit, unfair treatment of labor or any other unworthy self-interest. The second is to see that the man in the street knows and understands all that I have tried to set down in the foregoing.

For the man in the street is deeply involved in all this. He is "in the street" only to the political orators. To the rest of us, he is the man in the factory, the man on the truck, and the man behind the orders that industry fills. In short, he makes up this living American industry on whom the politician's charges spatter. As an employee he has a stake in the solvency, the security, and the reputation of the very plants at which criticism may be directed. Knowing the facts, he can answer the critics so far as his own plant is concerned and can see how the same kinds of facts apply to all industry. If he is a customer, suffering inconvenience as a result of the plant's service to national defense, a knowledge of the facts behind the plant's problems will help to make him a defender rather than a critic of responsible business management. If he is a neighbor in the community, the facts will equip him to be an interpreter of industry's problems to the people of the home town.

* * *

In this national defense effort, business enters into a new partnership with government, but, more importantly, into a deeper partnership with the American people. It is more than ever essential that it take all of the American people into its confidence, beginning with the people in its plants and going out through the ranks of its customers and its community neighbors to show them that they have a common interest in seeing that the task of national defense is undertaken in the American way.

As we all know, there are in this country some people who would like nothing better than to see American industry fail in this supreme test of service to the nation. They will watch with jealous eyes every move of every company that is engaged on a defense job. They will disparage its achievements, exaggerate its shortcomings, and distort its motives. For they would like to make over American industry to their own pattern, and they'll never have a better chance to get started with it than has been opened up by the national emergency. Or so it looks to them.

So, great as are the business hazards of the defense program for the individual business man, even greater hazards are involved for American industry as a whole. But, knowing the temper of American industrial leadership as I do, I am confident that it will handle its defense assignment with credit to itself and with great advantage to the nation that it serves—whether in war or in peace.

To help in that supreme test is the opportunity and the privilege of the McGraw-Hill organization.

President, McGraw-Hill Publishing Company, Inc.

This message is appearing in all McGraw-Hill industrial and business publications, reaching over a million readers.

TEXTILE WORLD

DOUGLAS G. WOOLF, Editor

Exit: The One-Ring Circus

THERE IS ALWAYS a temptation to make a one-ring circus out of life. The agitation of the moment is glorified into the begin-all and end-all of existence—too often the end-all.

This tendency is probably a hang-over from childhood. Any parent will know what we mean. The lollypop which Jackie can't have, the toy which his Sister Susie has copped from his room, the radio program he missed because he went down to the station to meet his Daddy, becomes for the moment his one-ring circus, and the temporary end-all of his existence. (In defense of our sex, we must add that Susie acts that way too—and unfortunately often at the same time.)

So do adults act that way—all of us. That includes industrialists—and, of course, textile manufacturers.

As we thumbed, recently, the issues of TEXTILE WORLD for the last decade, we were impressed, and depressed, by the number of crises-of-the-moment which had been glorified into one-ring circuses and which had thereby diverted, temporarily, the attention of the industry from its major job: making textiles and selling them at a profit.

NRA, processing tax, 32½¢ minimum wage—these and a dozen or more issues have dominated the textile stage for their relatively short periods of glorification, and have then yielded the spot-light to new crises.

We would be the last to deny the importance of each of these issues—but, in retrospect, it is easy to deny their *all*-importance.

AT THE MOMENT, national defense is the issue of the day. Since we have admitted the importance of those other problems, we certainly can't, and do not want to, cast the least doubt on the vital significance of this latest issue. In fact, we regard it as the greatest crisis which this country has faced since the 1860's. What has happened abroad can happen here. The heroic resistance of England to the march of brute force must not lull us into a sense of security.

The national defense program must go forward, but at an infinitely accelerated rate. Politics and red-tape, still ham-stringing that program, must be eliminated. Sane selective-service legislation, now in process of enactment, must be made to work. Materials and men must be forthcoming, instead of just dollars, to protect our shores and our institutions against all forms of attack, both from within and without. This is the will of 90-odd per cent of the American people. The rest wear—actually or mentally—colored shirts.

In all of this, the textile industry has a vital part to play. TEXTILE WORLD is devoting a considerable portion of its page-content to this defense subject—and will continue to do so, until the emergency passes. And that means, for a long, long time.

NEVERTHELESS, even that program should not be glorified into a one-ring circus. There is still the problem of re-vitalizing the American way of living. That phrase is not a mere shibboleth. It is the living, vital impulse which has carried this country through more than a century and a half of glorious existence. It is the spark that has inspired other democracies, new and old, throughout the world.

In extending this one-ring circus of defense into a multi-ring circus, we in this country must realize that merely the successful resistance to external and internal attacks will not make this country free once more. It will not rid us of the problems which have beset us during the last two decades. It will not solve, in any way, the question of how to cope with the inflationary hysteria of the 1920's or the deflationary hysteria of the 1930's.

In addition to defense, we need offense: offense which will re-establish the United States as a land of free opportunity for all of its people. We need a program which will make it possible to produce, at a profit, the myriad necessities, luxuries and cultural aids which 130,000,000 people want and have a right to expect. We need to evolve a system whereby our fields and factories can produce at full capacity so long as there are any of those 130,000,000 people who want their products. But that system must solve the mal-adjustments which made the late 1920's merely a fatuous prelude to depression.

It must also avoid the philosophy of scarcity which, in the 1930's, tried to sustain an artificial prosperity at the expense of many billions of dollars—and of millions of hitherto free citizens now either on relief rolls or on the receiving end of checks whose amounts are based on that same law of scarcity.

That is the mandate, today, of the American people. They are tired of poverty in the midst of embarrassing plenty. They want to go back to their farms or their factories or their stores, with assurance that our over-

abundant economy will supply to them and their children a proportionately abundant life.

There is no basic debatable issue in this country, today, on the subject of defense. But there *is* an issue on the subject of our national economy. There *is* an issue involving the return of a free people to free opportunity, with the State as an instrument of the people and not as a dictator.

The party in power during the next four years must be prepared to meet that issue.

And so, without the least impairment of our defense program, *but rather with the inevitable strengthening of it,* let us not make that program a one-ring circus. Let each individual and each group watch, and guard, the other rings which make up our national circus. And, then, let us coordinate them into a way of living, rather than a circus.

Douglas G. Woolf

Paris and New York

What's all the shootin' for? That's what we wanted to know, after seeing literally hundreds of news items in the daily press—all variations on the theme: "Paris is dead; long live New York!"

So we asked one of our contributors to find out. The result is the article on page 72. It is essentially a reportorial job—and a swell one—and like all such good jobs, it reduces the problem to simple terms. It describes the life-story of fashion as follows: "from a new idea through acceptance by a few to acceptance by many and then out the back door." It's really just as simple as that.

Apparently, the only new question created by the French tragedy is that of the supply of "new ideas." Not that there is any scarcity of inspiration in this country, but that there must be a functioning system whereby that latent inspiration finds expression in the form of creative design, and with proper reward for the artists. The article goes on to list the moves being made by several organizations toward that end.

Without prejudice to any of the other organizations involved, it is our feeling that the Fashion Group is the best nucleus for an attack on this whole problem. Its members are women who have devoted their lives to fashion, in its various phases, as a profession. Their jobs touch all the industry and trade groups which make up the cycle from "a new idea" to "out the back door." Their leadership in the present transition stage is essential.

Finally, the hard cold fact must be faced that just the word Paris on a new style has been enough to sell it. It is the job of American designers to give some of that potency to the word New York . . . When France comes back, as she will some day without question, it will be found that her products have lost none of their glamorous appeal, but at least American industries will have established their own claim to style leadership also.—*Editor.*

From Our Mail-Bag

✦ "I have read from cover to cover the August issue of TEXTILE WORLD. It is an intensely interesting industrial publication. The editorial 'A Plea for the Mopper-Uppers' stresses an administrative reform which as you know I have not only been advocating but practising for some time."

✦ "A truer word was never written—or spoken—than appears in your 'Plea for the Mopper-Uppers' in the August TEXTILE WORLD. How well do I recognize the truth of your comments! Congratulations upon your forthrightness!

"I wonder if those, who should read it, will actually see it. It seems there should be some way to blast this message across to the textile executive, supplementing the editorial column. That is a splendid vehicle, but does it carry the force to produce the intelligent action desired?

"Your publication can do a splendid service in championing this crusade. I wish I were in a position to help you other than just rooting from the side lines as an individual.

"More power to you!"

✦ "Allow me to commend the editorial in the August TEXTILE WORLD. I hope it will be widely copied in other trade papers, so that both executives and personnel alike become intensely conscious that 'industrial relations is not just a personnel function . . . It is a fundamental problem of developing morale, industry consciousness, and a psychology which relates the work of the individual to national needs.'

"At no time in our history has it been more necessary for employer and employee, for the one who assigns the work and the one who does it, to work as a team in producing. Production for national needs should be the constant, uppermost thought. Profit beyond that necessary to give a just return, to pay fair wages and to keep up plant and equipment, should not be asked—and both the owner and worker should be governed accordingly. I am a worker but with a knowledge of the executives' problems."

✦ "I spent yesterday afternoon reading the August issue of TEXTILE WORLD and I do want to congratulate you on it. It seems to be an especially good one. Every one of your articles on textiles and national defense rang the bell and your editorial article, 'Defense—A Job, Not an Emotion,' is the best thing of its kind I have ever read. I do hope that every textile executive reads this issue."

✦ "I have just read the current issue of TEXTILE WORLD and want especially to compliment you on two parts of it.

"First, the editorials, all of them, as they pleased me very much. Perhaps this only means that you and I are thinking somewhat alike, but at any rate they were certainly timely and forceful.

"In the second place, I think you have done the industry a grand service in presenting the two articles on Government buying. The information on the organization of Government buying offices and on the materials being bought should certainly be helpful."

✦ "I read with extreme interest your editorial entitled 'Once More, Hope Springs Eternal,' and I do want to compliment you on it. It was a corker, in fact, it had a world of common sense in it."

✦ "I want to sincerely compliment you on your editorial in the July issue. It was an inspired message."

✦ "Orchids on the July issue. For a 'dog days' issue, it is certainly topnotch, notably the rayon fabric article, the textiles and defense article and the 'I, Rayon' article which is both entertaining and informative."

✦ "I think 'I, Rayon' is one of the best articles to appear in any of the McGraw-Hill magazines since I have been reading them. Not only is it interestingly written, but it gives a clear and complete picture of the development of a new industry."

✦ "'I, Rayon' is simply marvelous. May we beg, borrow or steal more copies?"

SEE PAGE 85

THIS is the 16th Annual Rayon Number of TEXTILE WORLD. The special section, starting on page 85, deals primarily with the theme "Synthetics in National Defense." Another important feature is a forecast of rayon fabrics for 1941 on pages 92 and 93.

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New Synthetic for Car Seats

NEW SEATS in a New York subway car are covered with material woven from Saran, a synthetic resin derived from vinylidene chloride, applied over a cellular latex cushion made from Airtex. The seat which may be used in railway cars, buses, automobiles, theaters, restaurants and the home, is the result of cooperative research by four large companies: Dow Chemical Co., which developed the resin; Irvington Varnish & Insulator Co., which worked out an extrusion method for converting it into a continuous ribbon in a wide range of colors; Heywood-Wakefield Co., which adapted its weaving and other processes to Saran; and Firestone Rubber & Latex Co., which makes the Airtex cushions. A Firestone engineer coordinated the efforts of the four companies. Properties of Saran include high tensile strength; good flexing characteristics; non-flammability; and resistance to light, water, acids, alkalis, and most solvents. Although Saran here referred to is a rattan-like ribbon, it is possible to extrude vinylidene chloride in finer filaments.

Defense Purchases Accelerated

New appropriations and new calls for bids on textiles spur the industry

BY BLAINE STUBBLEFIELD
Washington Office, TEXTILE WORLD

MILITARY EXPERTS still say Great Britain is in extreme jeopardy, but more and more run-of-the-mill observers, who have watched the experts make terrible mistakes lately, say the English spirit has been under-estimated and that it may prevail over mechanical odds. The United States Government, meanwhile, continues its defense drive unabated, with prospects of more steam when the election is over. Purchase of clothing and textile equipment goes ahead, with new appropriations and calls for bids on various materials.

About $102,000,000 has been appropriated for clothing and textile equipment in the regular 1941 supply bill and the first supplementary bill. Now, the second supplementary ($5,000,000,000 emergency) bill, passed by the House and pending before the Senate at this writing, calls for $200,000,000 more.

Maj. Gen. Edmund B. Gregory, head of the Quartermaster Corps, testifying before Senate Appropriations subcommittee, said the original $102,000,000 provided clothing and clothing maintenance for 375,000 men for fiscal 1941, including some new types of supplies for the National Guard. It also included cloth, which is furnished by QM to manufacturers, for 1,200,000 men.

The new bill, $200,000,000, would provide clothing for 1,200,000, and their clothing maintenance, for four months, plus critical items of cloth for an additional 800,000 men. This means that 2,000,000 men could be provided for at a cost of $100 each. This is figured at $80 initial cost, and $20 for maintenance, meaning replacements.

There is very little reserve stock of clothing; QM is delivering newly-purchased garments almost directly to the men coming in from day to day. The 2,000,000 men referred to include 400,000 National Guard, which could be supplied on the same basis of issue as the Regular Army by Oct. 1.

Of the new $200,000,000 called for, about $92,000,000 would go for uniforms and other clothing; $64,000,000 for cloth and canvas leggings, etc.; the balance for barracks equipment only partially made from textiles.

INDICATING THE TREND in Army textile and clothing requirements, the following major bid openings are quoted, as samples, from QM records in Washington: Aug. 16, bids were opened on a call for 1,000,000 bleached sheets, of which 756,650 (63x108 and 72x108) were awarded, the balance to be awarded Aug. 30.

Aug. 28: 1,200,000 wool blankets.

Aug. 30: 2,000,000 cotton drawers, short; total calls for this garment since June now totals 5,000,000; QM reserves the right to limit awards to 300,000 garments per manufacturer . . Undershirts, summer, sleeveless, 2,500,000; service coats, serge, cloth furnished by the Government, 200,000; cotton khaki cloth, 8.2 oz., 6,000,000 yd.; duck, OD, water repellent, (weight not given in report) 1,350,000 yd.

Sept. 3: 1,500,000 yd. 32 oz. OD overcoating; 4,540,000 yd. 18 oz. serge; 1,800,000 yd. 10½ oz. OD flannel shirting; 4,400,000 yd. 15.5 oz. tent duck; 296,000 yd. 9.8 oz. tent duck; 3,360,000 yd. 7.9 oz. tent duck; 230,660 pr. cotton socks; 200,000 cotton khaki trousers, QM to furnish material.

Sept. 4: 200,000 cotton khaki shirts, QM to furnish material.

Sept. 10: 889,931 pr. wool socks, light; 123,000 comforters, cotton-filled.

Naturally, with expansion orders enlivening the industry, there would be some question from manufacturers in various regions whether they were getting their share. Some southern garment makers complained on this score, said that freight costs were discriminatory against their ability to bid. TEXTILE WORLD is told by high procurement officers that there is now no ground for such complaint. The Government is taking delivery on finished clothing, sheets, blankets, FOB factory, and it pays the freight on cloth which it furnishes to cutting and sewing plants, so all manufacturers get exactly an even break.

In line with this and other efforts to speed production on critical goods, the Quartermaster is trying to line up with "commercial" practice as much as possible. One instance of this is in the procurement of sheets. For years the Army used a 74x66 count, which has a breaking strength of 70-70. But a more popular cloth now is a count of 64x64. This cloth is much more readily available, and the Army is taking it for sheets, with a loss of only 14% in breaking strength, and finds it good enough.

Likewise, for shorts, QM is changing from a count of 128x68 to 136x60, which is a more available broadcloth, because standard in the shirt trade.

Another change, attributed to improved knitting technique, is the use of knitted lining for caps, a new type of manufacture. These linings are bought as piece goods; bids on 100,000 yd. were being opened as this was written. The knitted lining gives the proper padding or blanket effect—it looks like blanket—and it has more warmth than the regular lining.

Although it is said that there are shortages of some grades of cotton, the Washington QM office has not noticed it, except in the procurement of cotton-filled mattresses. It has been necessary to change the specification of felting to allow for the conservation of linters. This office said it had no difficulty in getting goods from long-staple cotton.

Incidentally, both linters and flax are on the export licensing list, which recently went into effect under an Act of Congress. These items are of course not exported normally, but it was feared that belligerents might make excessive offers through second parties and coax some of these fibers out of the country.

CONCERNING WOOL, and the anticipated shortage in case of heavy mobilization, there is nothing new, except that the Army is giving close attention to synthetic substitutes that could be used if necessary. Some time ago, the Defense Commission made known that it was studying the possibility of storing wool against a stormy day. This project is still being worked on, with no conclusions to report. Department of Agriculture experts told this writer that wool can be stored, if properly handled, indefinitely. They said that wool had been kept in good condition,

except for color change, at the Smithsonian Institute for 80 years.

The Textile Division of the Defense Commission is believed to be devoting much of its time to the study of reallocation of wool as between the military and the civil population in case of emergency; to a study of the possible increase of domestic production; and a study of new sources that might be developed in possessions of the United States and foreign countries. Members of the Division will say only that they are trying to forestall any bottlenecks that might develop. They fear that any more specific information might tend to dislocate markets.

Observers have pointed out recently that other than our own military demands for textiles might be made on this country—specifically, by Great Britain. In reply to TEXTILE WORLD's inquiry, experts in the Department of Commerce admitted that the concentration of woolen mills at Bradford, England, and likewise the grouping of cotton mills at Manchester, are particularly vulnerable to bombing. But they refused to be concerned because, they said, the output of these mills not only supplies Britain, but perhaps three-quarters of it is exported. Therefore, the mills would have to be reduced far below half of their capacity before home needs would be affected.

The capacity of this country's textile industry to take care of domestic requirements remains unquestioned. A general in the Army's procurement branch told this writer that there is absolutely no thought that any plant expansion will be necessary. There is no possibility whatever, he said, that the Government will finance or build textile plants, as it is doing in the field of ammunition and armament and aircraft.

This same officer declared that there is no intention on the part of the Army of departing from the regular system of purchasing under the competitive bidding system. Direct negotiation has been resorted to lately in the procurement of critical equipment, but in all cases this method has applied to non-commercial manufactures.

One move *is* being made which would permit textile manufacturers to expand their plants with Government aid. That is the "bankable contract," devised by the Defense Commission, and due for approval by Congress. Under this plan, the plant owner uses his contract as collateral for loans for expansion of facilities, and the Government amortizes the amount in five equal annual installments. It is not expected that any textile companies will use it.

Photo by U. S. Army Signal Corps

Outfitting the nation's growing army

LAST MONTH a new face among Federal agencies having to do with textiles for defense, appeared on the scene. It was the Department of Justice, which, since July 11, has had a grand jury investigating choke-points in the defense program. An indictment was obtained by a member of the anti-trust division of Justice, charging a group of cotton goods manufacturers with conspiracy to fix prices of cloth used as covering for private airplanes and military training planes and on the rudders and elevators of big metal planes. Although normally this special cloth, which is made of long-staple Arizona cotton, is taken in small quantities, the Army recently called for bids on a minimum of 1,500,000 yd. to a maximum of 3,000,000 yd. There is no question of infringement of patents; almost any mill can make the cloth, but because of the tedious process and unusual expense, most of them don't. It is charged that the defendants met in 1936 and set up similar price structures and non-competitive sales methods, and that as a result prices were increased about 28%. The complaint was made by an airplane manufacturer to the Civil Aeronautics Authority, which passed it along to Justice.

NAVY'S TEXTILE PROCUREMENT program is small, compared with Army's. Although Congress has authorized, and has begun to appropriate for, the world's biggest navy, and although construction is now under full steam, time for personnel expansion has not come. In fact, Navy manpower increase for this fiscal year is only 25,000, compared with 40,000 last fiscal year.

Large orders placed recently are mainly for reserve stocks. Some items of interest: 240,000 yd. ½" braid cotton, black; 455,000 yd. 16 oz. melton cloth, blue; 200,000 yd. 30 oz. for overcoating, dark blue; 2,200,000 yd. 29 oz. drill, bleached; 450,000 yd. 32 oz. drill, bleached; 280,000 yd. 11 oz. flannel, blue, for jumper shirts; 636,000 white handkerchiefs; 53,000 jerseys; 25,000 overcoats, Navy supplied cloth; 160,500 spools silk thread.

To Navy's clothing and small stores revolving fund of about $13,000,000, Congress added $11,000,000 this session, now largely spent. It is not expected there will be any further substantial calls for bids until near Jan. 1. Additional funds will have to be voted, if these are to provide for extensive personnel increase.

Fabrics For National Defense

Analysis of two cotton fabrics for work clothing and field use by Army

This is the second in a series of articles dealing with fabrics for national defense—both wool and cotton, woven and knitted. Mr. Hoye interrupts his articles on "Staple Cotton Fabrics" to present the following information on cotton textiles essential to our country's military forces.

By JOHN HOYE

COTTON FABRICS now being purchased in large quantities by the government agencies for the national defense program include staple fabrics, such as ducks, denims, and drills, as well as semi-staple twills. The twills include several combed yarn constructions which were originally imported and are used for their inherent tensile strength, wearing qualities, and smart clean appearance. The gray fabrics are warp twills, also known as "army uniform" twill, lining twill, "marine" drill, "navy" drill, etc., according to their respective uses. In the trade, "drills" are 3-harness twills of coarse carded yarns, the warp forming the twill lines.

8.2-OZ. UNIFORM TWILL. This cloth, known as "army uniform twill," is used in the manufacture of cotton uniforms, chevrons, and certain caps and shirts, for the Army. It is a strong, soft, lustrous fabric made of ply combed yarns. Approximate gray cloth construction necessary to give required finished product: 29 to 58 in.; 1.50 (sq.) yd.; 114x54; warp, 36/2 combed, ZS twist; filling, 25/2 combed, ZS twist.

The cloth is covered by U. S. Army Specification No. 6-201A. A digest of the specification follows:

Yarn—Cotton used in yarns shall be thoroughly cleaned, well combed, drawn, and evenly spun and twisted into two-ply yarns. (Because of the high tensile strength required of this fabric combed peeler warp yarns are made from 1⅛-in. staple, good season cotton.)

Color—Shall be of the same shade as the standard sample (tan, buff, or dark blue); shall be evenly dyed with vat dyes.

Fastness—Shall show good fastness under following conditions: light, 144 hr. in Fade-Ometer; weather, 10, 20, and 30 days; laundering, washing test covered by paragraphs 1 and 2, section XIV, Federal Specification CCC-T-191; bleaching, 1 hour at room temperature in sodium hypochlorite solution containing 0.7% available chlorine.

Physical Requirements—Width, inside selvages, 28 to 57 in.; weight (maximum per sq.yd.), 8.2 oz.; ends and picks (minimum) 116x56; breaking strength (1x1x3 grab), 180 lb. warp, 130 lb. filling.

Weave—4-harness twill to the right, $\frac{3}{1}$.

Finish—Cloth to be singed, desized, bleached, and fully mercerized. Twill to be clear and prominent.

Shrinkage—Cloth to be preshrunk, and in subsequent shrinkage tests (Federal Specifications CCC-T-191) shall not shrink more than 1% in either warp or filling direction.

Length—Pieces not less than 50 yd.

8.5-OZ. HERRINGBONE TWILL. This is a 3-harness warp twill used in large quantities by the Army for one-piece work suits, or coveralls. The tank and truck forces and Air Corps use herringbone coveralls for field and work clothes, and growth of these branches greatly increased demand for the fabrics. A recent change in specifications, permitting use of carded yarns for both warp and filling, will allow many more mills to submit bids. Approximate gray cloth construction: 37 to 43 in.; 1.58 (sq.) yd.; 70x44; 11's warp, 9's filling, carded, Z-twist.

Specifications (U. S. Army Specification No. 6-261) are the same as those for the 8.2 oz. twill with the following exceptions:

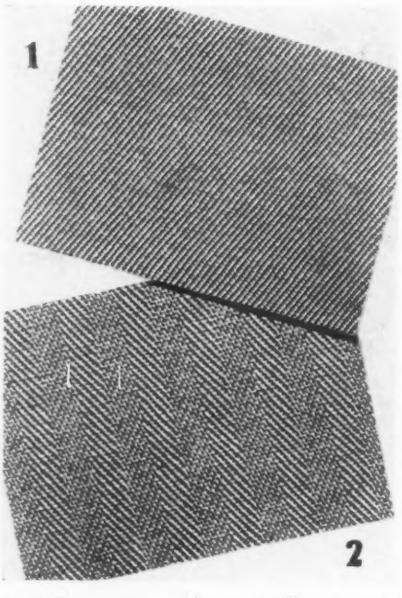
Yarns—Well carded yarns acceptable.

Color—Unless otherwise specified, shall be of same shade of olive drab as standard sample; dyed with vat dyes.

Fastness—No requirement as to light, others same as 8.2 oz. twill.

Physical requirements: Width, inside selvage, 36 to 42 in.; weight (minimum per sq.yd.), 8.5 oz.; ends and picks (minimum), 72x46; breaking strength (1x1x3 grab), 125 lb. warp, 85 lb. filling.

Weave—3-harness herringbone twill, $\frac{2}{1}$, 12 ends right and 12 left.



1. 8.2 ounce uniform twill. 2. 8.5 ounce herringbone

Air Corps mechanics wearing herringbone coveralls

Finishing Army Overcoatings

Speed-up of fulling operation necessary to uncork a bottle-neck to production

By DAVID WELSH

WHEN WINTER COMES, the Army must have ready an ample supply of overcoats. Already orders have been placed for more than 4,000,000 yd. of olive drab overcoating. Undoubtedly many more millions will be needed. The time required to full overcoatings is three to four times as long as for ordinary fabrics, and Scottish woolen mills working on army overcoatings have found that fulling constitutes a serious bottle-neck to production. We must not have such a bottle-neck in this country.

There are three measures which a mill can take to step up the production of its fulling department — operate longer hours, install equipment to give increased capacity, improve its present fulling methods. This article discusses only the third of these possibilities.

Finishing of Army overcoatings involves mechanical, chemical, and physical problems. Beginning with the mechanical part of the problem, let us see how the operation can be speeded up by making use of fulling-mill accessories that some plants may not have at present. If the pail-pouring-on method of applying soap to the goods is employed, soaping boxes can be made at small expense which will speed up soaping 75%.

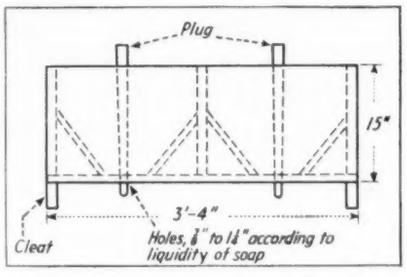


Fig. 1. Soaping box for No. 10 Hunter fulling mill; boxes for other mills can be made on same principle

Soaping boxes made to fit in the front top of the mill, just above the whip roll, are made the full width of the inside of the mill. The front top lid is taken off at the hinges. This makes room for the soap box. The approximate dimensions of a soaping box for a No. 10 Hunter mill are shown in Fig. 1; other types or makes of fulling mills can be equipped on the same principle. The box has a partition in the center so that each side can be soaped according to the load of goods. When the mill has been loaded dry and the goods run around a couple of times to take out the snarls, the soap is poured into each side of the soap-box to the full amount required for the load of cloth. A man stands on a box or short step ladder, pulls the plugs after the mill has been started, and the soap is all on in a minute and a half. This method keeps the fulling mill clean, as all the soap is squeezed right into the goods.

UNLOADING DEVICES. Overcoatings are heavy and awkward to take out of the mill when ready for the washer. A reel over the front, powered from the mill, will assist in unloading. If there are several mills in a row, a line of reels on one shaft is simple and effective, making it easy to run the goods into a box, or even onto flat trucks. The reels can be of the four-wing type, 8 to 12 in. in diameter. They can be mounted on a 1½-in. shaft, with a clutch pulley on one end, so that the reel runs only when unloading and at about 140 r.p.m.

If the backs of the mills face the washers, unloading is even easier, as by letting down and hinging the back-board (see Fig. 2), a slide or bridge can be made of wood to fit against the bottom of the back of the trap. The bridge, which is long enough slightly to overhang the let-down back-board, fits into cleats which are fastened to the sides and the center boards of the mill. When the goods have been fulled and cut down, they are all run down into the bottom of the mill. The slide boards are slipped into place, the ends of the pieces poked in front against the rolls, the mill is started, and the cloth shoots over the back to the floor or into a box. Just about 2 min. is needed to unload.

A soaping machine has many advantages over the hand-and-pail method of soaping fabrics which are to be fulled or scoured. An article by the writer in the March 1940 issue of TEXTILE WORLD, described and illustrated a suitable type of soaper and system of soap tanks. The speed of the soaper should be so adjusted that sufficient soap is applied in one run of the goods through the machine.

CHEMICAL AND PHYSICAL PROBLEMS in fulling call for consideration of the fiber lubricant added to the wool in the

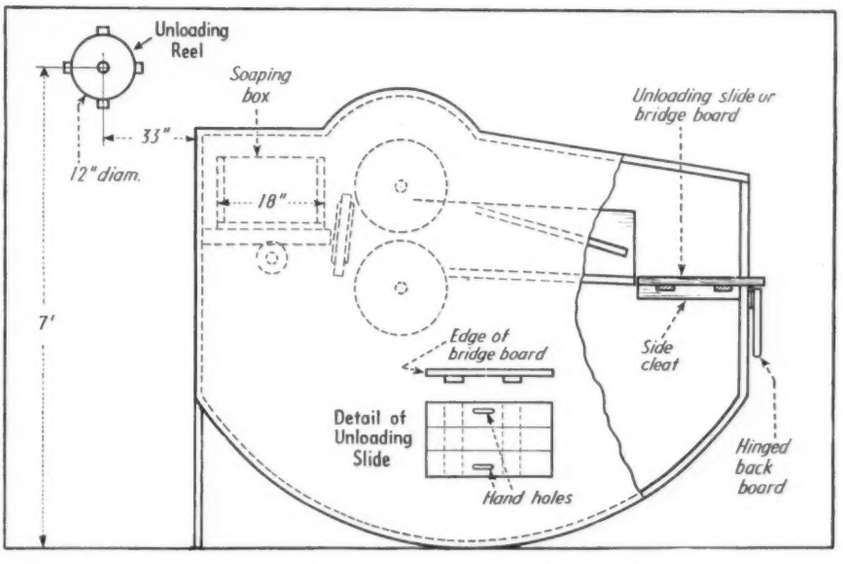


Fig. 2. Fulling mill fitted with soaping box, unloading bridge, and unloading reel; reel is unnecessary if bridge is used, and vice versa

picker house, the fulling solution, and the time and temperature of fulling. Formerly animal and vegetable oil emulsions were employed for lubricating the fibers before spinning. Today mineral oil and other compounds are widely used. Accordingly, the finisher must determine just what fulling formula will give the best and quickest results with the particular lubricant on the fibers. For example, with mineral-oiled stock, he may prefer a heavier-bodied soap and almost certainly he will find it necessary to reduce the percentage of alkali, or even omit all alkali from the formula. If a correct formula is not used, the goods will chafe and flock excessively. Excessive flocking, in turn, will necessitate more shrinkage to make up for the loss of fiber.

If the plant is using too weak a fulling solution, it can save both time and stock by increasing the strength. It is well worth while for any finisher to make a test by running four pieces with his regular formula and four pieces with a formula containing twice as much soap, but the same amount of alkali. For example, if the present formula consists of 6 oz. of soap and 2 oz. of alkali, try 12 oz. of soap and 2 oz. of alkali (do not change amounts of solvents or other assistants in making this test).

With a soap solution of correct strength, felting will begin almost immediately, taking up a large percentage of the short fibers that generally go to the bottom of the mill. The goods will full much faster and will be firmer, show fewer wrinkles, and have a greater tensile strength when finished. In many plants the total cost of the additional soap has been compensated for by an increase of 1 to 2 yd. in the finished length of each piece. The saving in time should amount to at least 25%.

For faster fulling the machine speed should be *slower* than that ordinarily employed. It is not the speed of the rolls that does the actual fulling, but the slower push in the trap. As a rule, best results will be obtained at a speed of 125 to 130 r.p.m., with the necessary weights to bring both width and length to the proper point at about the same time.

Heat is an important factor in fulling Army overcoatings. Too low a temperature retards felting; too high a temperature affects the color. The goods are cool at the start, but begin to warm up quickly with all doors and the back and front of the mill closed. When they begin to steam, open the back door. Frequently this will keep the goods at the right temperature; but if they steam too much, open the lower half of the front doors. An experienced finisher soon gets to know the best temperature for various types of fabrics by laying on of the hands as the goods are running. When he has determined what gives the best results on Army overcoatings, he should make certain that the temperature is regulated as uniformly as possible so that all lots will be given the same treatment.

The finisher must do everything possible to obtain quick and uniform shrinkage. Too much shrinkage is money wasted. If the goods are too light in weight, and lack body and cover, they may have to be re-fulled—a time-consuming operation and one which is likely to result in change of shade.

The above suggestions, while applying specifically to Army overcoatings, also will aid the finisher in obtaining quicker and better results in fulling other types of materials.

Weave Imperfections

Systematic check of all possible causes assures against recurrence

CRACK-LIKE MARKS in the men's suitings it was weaving were noted recently by a worsted mill. Actually, however, the defects were not cracks, in the usually accepted meaning of the word, since they ran warpwise and there was no regularity either in their length or in their location across the fabric. The illustration shows these imperfections. This fabric contains worsted yarns both warp- and fillingwise. It was reeded two ends per dent in a 16-dent reed, and woven 32 picks per in.

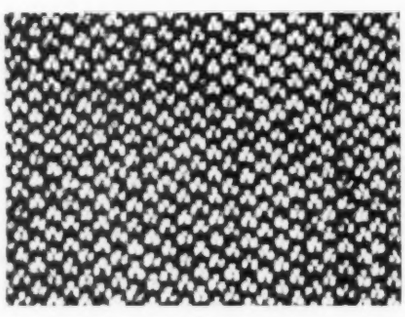
The mill decided to check thoroughly all potential causes of the trouble, to prevent the same defect from cropping up again at a later date from some other cause.

First of all, it was noted that in the weave of the cloth there were two ends up together, and two ends down together, all the time. This suggested that the defects might have been caused by one warp end rolling around another, and thus becoming stretched. Later, the end could have become free and again woven satisfactorily. This condition was remedied by drawing-in the ends which weave together on different harnesses and keeping them separated by breaking the shed.

A second possibility was that readjustment of the timing of the harness cylinders might be of assistance. Therefore, they were set so that the moving harnesses would come together when the reed was at least 2¼ in. from the fell of the cloth. The eccentric gears were also set so that, while the reed was in this position, the largest part of the driving eccentric would be in mesh with the smallest part of the driven eccentric. This gave most speed to the harnesses when such speed could not damage the warp ends, since they were in their slackest position. The extra speed of harnesses at this time also helped materially to assure passage of warp knots through the reed.

It was also felt that the reed used on this fabric was too fine. Any knot on warp yarn of the size in question would be too large to pass readily through the reed: if a knot caught when the reed was going back, a defect would be made in cloth already woven; if a knot caught when the reed was coming forward, it would be pushed up into the cloth, thus making that end tighter than the others. Use of a coarser reed, with three ends per dent, eliminated trouble from this cause. Since at the same time the shed was broken, as already mentioned, there was no difficulty in using the coarser reed.

The possibility that the yarns in the defective cloth might be somewhat uneven was also studied. However, it was felt this probably was the result of stretching, since this type of yarn stretches 2 in. per yd. before breaking.



Men's suiting with crack-like defects

It Was, It Was the CAT

"To those who attended the hearings (of the special House committee investigating the National Labor Relations Board) the story of the juvenile judges was easily one of the most fascinating of the committee's revelations. Observers were frequently popeyed with incredulity as they listened to the parade of young ladies and gentlemen from the review section. . . . The youths of the Labor Board have been given an authority such as comes to few before middle age. On their recommendation rests the fate of hundreds of thousands of workingmen and hundreds of millions of capital."—From an article by Willard Edwards in the *Saturday Evening Post.*

By JACK CARD

An imaginary group of conversations between the personnel director (if any) of the National Labor Relations Board and applicants for jobs as field attorneys for the Board. All incidents are accidentally fictitious.

PERSONNEL DIRECTOR: What experience have you had as an attorney?

APPLICANT A: Well, sir, I worked in the law firm of Smith, Smith, Smith, and Smith, Jr., for six months after leaving college and. . . .

P. D.: That's bad, very bad. Too much experience. You are apt to be biased. Did Smith, Smith, Smith, and Smith, Jr., have any industrial clients?

APP. A: Well, sir, only one that you might call an industrial client, a grocer in the town who had himself and two clerks and a cashier. . . .

P. D.: That's bad, it's awful. Big business, with all its taint. Did Smith, Smith, Smith, and Smith, Jr., ever represent this monopolistic grocery concern in a labor case?

APP. A.: Well, not exactly. But one of the clerks—he's gone now—had been stealing groceries, and money and stamps. And one day, the boss found him leaving the store with the cat—you know, the anti-mice device they use in the retail grocery trade—and the boss got sort of upset and asked him, pretty please, just to leave the cat. So the clerk brought suit against the boss for infringement of his rights to collective bargaining under the NLRA. So the boss called in Smith, Smith, Smith, and Smith, Jr., to defend him in court. Well, just about that time, the store started to be picketed. One group, I think it was C.I.O., represented the Exterminators Union 317, and displayed placards to the effect that the cat didn't have a union card. Another group, I think it was A. F. of L., paraded as the Cat-Stealers Union 46, and claimed that the boss was unfair to organized cat-stealing. But just before the case was scheduled for the local court, the law caught up with the thieving clerk. It seems he was wanted for assault and battery, wife-beating, and driving without a license. So he went to jail, and our client hired another clerk.

P. D.: *So*, you have been connected with a firm, Smith, Smith, Smith, and Smith, Jr., who encouraged their client, a big industrialist, in discharging a man for union activities, have you?

APP. A.: Well, sir, not quite. You see the pickets had nothing to do with the case. . . .

P. D.: Nothing to do with the case? When they gave their time in the cause of suffering humanity—union exterminators and union cat-stealers? Have you no social consciousness? I'm afraid you won't do. Anyway, we've had enough trouble with Smiths on the Board. We don't need any more Smiths, thank you. Good day, sir.

* * *

PERSONNEL DIRECTOR: What is your name, sir?

APPLICANT B: Ralph Jones, Jr.

P. D.: Who was your father?

APP. B: Ralph Jones, Sr., sir.

P. D.: That's bad. A clear case of industrial nepotism. What has your experience been?

APP. B: Well, sir, after college, I read law in a little firm in my home town.

P. D.: What did you read?

APP. B: Well, you see, there wasn't any business around the office, and I got sort of bored, and I found a dog-eared copy of Adam Smith and read that.

P. D.: Classical economics, huh? You won't do. Besides, as I told the last applicant, we're not interested in Smiths—whether Adam or Eve. Good day, sir.

* * *

PERSONNEL DIRECTOR: What did you do after getting your college degree?

APPLICANT C: Well, sir, the trouble is I didn't get my degree. I flunked in my freshman year in law school.

P. D.: *So*, another case of suppression of your rights to collective bargaining, eh?

APP. C: Well, I don't know about that. I was called up before the faculty, and asked if I had anything to say, and I didn't know what to answer, so I said no. And my faculty adviser tried to get me to say something, but I still said no.

P. D.: A clear case of coercion. You acted bravely, my good man. Now, did you ever read the National Labor Relations Act?

APP. C: No, sir, but. . . .

P. D.: No "buts," please. Did you ever hear of the National Labor Relations Board?

APP. C: No, sir, but. . . .

P. D.: No "buts," I said. Did you ever hear of the Smiths?

APP. C: No, sir, but. . . .

P. D.: If you want this job, you'll skip the "buts." You don't know Donald Wakefield Smith, Edwin Smith, Smith Brothers Cough Drops, or Smith, Smith, Smith, and Smith, Jr.?

APP. C: No, sir, b-b-b. . . .

P. D.: That's better. And if a case came before you for review, and if it were a clear case of violation of the collective-bargaining rights of a group of workers, what would you do?

APP. C: Well, sir, I don't know just what to say about that. You see. . . .

P. D.: That's fine. You're hired. Your first case for review will be a marauding grocer who prevented a cat from joining the Exterminators Union. Opposed to you will be the blood-sucking firm of Smith, Smith, Smith, and Smith, Jr.

APP. C: Well, sir, we'll get the Smiths.

P. D.: That's enough. Just remember that you're not hired to get *all* the Smiths. One has gone anyway. Just get the cat.

* * *

OBLIGATO: (from Gilbert and Sullivan) It was, it was the CAT!

America . . . Refuge for Fashion

France's blackout provides this country with chance to show its style leadership

By MARJORIE BELLE CLARK

WITH PARIS, the traditional center of Fashion, in the throes of social and economic chaos, New York and America is now undertaking the job of inspiring and directing the fashions of the world.

Of all the millions of words that have been printed or spoken within the last few weeks on the subject of American fashion leadership, the boil-down seems to be that New York City is to be the queen-bee of world fashions.

In our own inimitable way—based, oftimes, on the French tradition in which most American fashion originators have been schooled—we have been going about the business of becoming a style leader for almost a generation. Not for a moment would an informed person suggest that New York is to become another "Paris," for there is more difference between the American way of doing things and French tradition than a mere Atlantic Ocean or the 48 hours it takes to cross it. The real French spirit is one of culture; America is in business to make money.

France, the crossroads of world travel and the connecting link between ancient and modern civilizations, has been for centuries a breeding ground for culture. The French heritage embodies an indomitable love of beauty and the desire for artistic perfection. In order to understand why Paris became known for beautiful clothes, this heritage must not be overlooked. In France, hundreds of skilled craftsmen, each striving to create something beautiful, poured their very souls into the art of making lovely clothes.

The nucleus into which all of these ideas were gathered, sorted, selected, executed and promoted was a small group of Parisian couturiers who were called, collectively, the Haute Couture. Since the days when the temperamental Rose Bertin created gowns and headdresses for Marie Antoinette, Paris and France have ruled the world of fashion. In France, the couturier and the fabric maker worked hand-in-hand. The success of many silhouettes has been determined by the artists who designed and created the necessary fabrics. The couturier, in turn, often

Shops Put Paris Behind and Go All-American

First All-American Designs of Fall Show U. S. Need Fear No Fashion Famine

By Katherine Vincent
Fashion Editor

From New York Herald-Tribune
Sept. 4, 1940

provided the fabric maker with ideas for a design motif or new texture.

In America, there are few people concerned with the business of feminine fashions who think first of the artistic achievement. Here, we must make money. If we produce something beautiful and in good taste, it must also fit into the wardrobes and budgets of many people in order for enough of it to be sold to yield a profit.

That's fine—as far as it goes—but we have also been known to promote and publicize and make a lot of money out of fashions which were neither beautiful nor in good taste. In our slavery to the profit motive we have not always been far-sighted. For fashions run in cycles—from a new idea through acceptance by a few to acceptance by many and then out the back door. This means that at a certain point in the fashion cycle a vulnerability is created where the chiseler steps in and profits parasitically on someone else's idea.

In the past, many of these ideas have originated in France and others which did not, have been introduced there—simply because the French stamp of approval was enough to start a fashion into the up-curve of its cycle. At the present moment, we in America are suddenly faced with the realization that in order for our fashion system to continue to function, we must have here the creative design which has formerly come from Europe. We must also have "the few" courageous women who are to be the first to accept and wear high-style fashions. Furthermore, we must afford protection to the artists who will painstakingly invent the inspirational ideas which are to feed our mass-production system. That is the reason why there has been so much hysterical chatter recently, in fabric and fashion circles, about "What are we going to do?"

AS THIS ISSUE goes to press, there seem to be a dozen or more groups who want to answer the question. Each has the expectation of becoming a part of the fashion creation center. There is a genuine problem here, for all must guard against any action which would curb the freedom of the artist; all must fight constantly against regimentation, discrimination and the stifling of any new idea.

George A. Sloan, New York City Commissioner of Commerce and former president of the Cotton-Textile Institute, has pointed out that this metropolitan city has all the essential elements for the establishment of a creative fashion center—designers, unexcelled skill in the needlecraft industries, a tremendous women's-wear industry, the sales organizations for almost all major textile manufacturers, promotional experts, retail stores and a constant stream of visitors from all parts of the world. In order to foster cooperation among designers, producers, and distributors, the mayor of New York has recently appointed a special Business Advisory Committee.

The Fashion Originators Guild of America, established some years ago to protect American dress designers, knows well the difficulties which have been encountered because of lack of legal protection in this country. Many trade-wise observers believe that any move toward creative design must be backed by proper laws. Recently, a new organization, the American Council for Style and Design, Inc, has been formed with the hope of correcting this retarding factor. As yet the activities of this group and the methods it will use have not been made public.

The fabric section of the Fashion Group, Inc.—an organization made up of the outstanding fashion career women of the country—has undertaken the problem of polling fabric manufacturers and designers to find out how much each would be willing to do to contribute to the creation of original fabrics here. This activity may start an important ball rolling, for American

fabric makers have relied considerably on European laboratories.

A still more specific move was the concerted action by half-a-dozen so-called "high style" houses of the upper Fifth Avenue area in New York to arrange a schedule of non-conflicting previews of their various collections, in the French manner. The firms included Bonwit Teller, Bergdorf Goodman, Hattie Carnegie, Jay Thorpe, Milgrim and Saks 5th Avenue. Collectively they showed some 800 original American designed costumes for sports, daytime, street and evening wear, during Labor Day week. The French custom of rigidly restricted guest lists was followed, as was an atmosphere of the Paris openings, with their soft lights, music, champagne and formality.

IN BRIDGING THE GAP between the American system of mass production and the necessity of establishing creative leadership here, the place of organized labor has been considered. Such labor leaders as David Dubinsky, president of the International Ladies Garment Workers Union, realizing that this new venture offers additional avenues of employment, are inclined to support it, and, if necessary, will make some efforts of their own to set up special rules and regulations governing what might be called "experimental" work.

While it is true that the French craftsman could subsist, virtually, on the glory of the acceptance of one of his creations by a major couturier, he was paid very low wages, and worked long hours under all sorts of trying conditions. The strides made by American workers in the textile and garment industries during the last two decades have brought about wage levels and working conditions which are so much better than those in France that comparison is out of the question. Americans are exceedingly proud of these facts and would not wish to disturb them under any circumstances.

American retailers, who have "merchandised" the art of the Parisian couturiers as well as the fashions of New York's famous garment center, have naturally shown considerable interest in the new fashion leadership because it will be up to them to give the creative designer a channel of distribution. Already alert to the necessity of advantageous display, fashion and color coordination, publicity, promotion and advertising, most retail stores are furthering their efforts in these directions.

No small part in the successful execution of a style leadership is played by the "clientele." America has a few women who have the courage, money, time and inclination to be "best-dressed." If fashions are to flourish, these few individuals must be willing to accept the responsibilities of being style leaders. It isn't likely that feminine America has over-looked this opportunity, although as yet the top-flighters have not spoken. Don't worry, they will.

AT THE MOMENT, the greatest problem confronting fashion creators is probably that of devising some means of supplying the luxury market with fabrics of distinctive and exclusive nature. In the past, most of these fabrics have been imported from Europe. The Parisian couturiers had at their fingertips a wealth of unusual fabrics—always only a few yards of each. These were executed by skilled fabric creators, perhaps on intricate and expensive looms. The loss of imported fabrics creates a new market for our textile mills and converters.

Although the mass production system has not allowed American fabric markers the privilege of unbridled experimenting, we do have the designers and facilities to provide these high style fabrics. This challenge will undoubtedly be met but who is going to set up the experimental laboratories and who is going to pay for them are unanswered questions.

Another undecided matter concerns the future of Paris as a center of fashion. Even in the face of previous economic crises, France has tenaciously held on to her culture, and fashion is a major part of that culture. Whether or not Paris becomes reestablished with "dressmaking going on as usual," this is at least an opportunity for America to show her own variety of style leadership. Already leading the world in the creation and perfection of rayons, in the development of dyestuffs, in color coordination of textiles with other materials such as leathers and plastics and in the utilization of synthetic fibers, America has only to extend her creative supremacy.

Wide World Photo

At current New York fashion previews ". . . the French custom of restricted guest lists was followed as well as the atmosphere of Paris."

Fleming Addresses Garment Men

Southern association also studies styles and trends at Atlanta

THE THIRD ANNUAL MEETING OF the Southern Garment Manufacturers Association at the Atlanta Biltmore Hotel, in Atlanta, Ga., from Aug. 26 to 28, featured an address by Col. Philip B. Fleming, Administrator, Wage and Hour Division, U. S. Dept. of Labor. "Labor costs comprise 23% of the costs of garment manufacturing," Colonel Fleming pointed out, "as compared with 10% in the automobile industry; 3½% in the flour industry and 2½% in the making of cigarettes. As a consequence, therefore, the matter of conscienceless price-cutting, regarded as ruinous by the industry, is largely based on the costs of labor. Through rigid enforcement of the Fair Labor Standards Act by the Wage and Hour Division, labor as a basis for price-cutting will be eliminated.

"I think you are going to be able to make a better approach to your problem of staying in business and making money. You are still going to encounter under-selling in the markets. Competition is going to continue. But you will know that underselling is not made possible by wage-cutting. Business may not continue to be good indefinitely. And if it is no longer good, and you are forced to make economies to meet prices, you are going to economize—but *not* by cutting wages. You are going to seek economy by efficiencies, no matter how willing your own labor is to cut prices in order to meet competition."

The convention opened Aug. 26 with an address by its president, W. J. Vereen. Mr. Vereen reviewed briefly the affairs of the association and spoke of its satisfactory growth and healthy condition. He paid tribute to W. Gordon McKelvey, counsel, who has so ably steered the course of the association.

Left to right: J. Hopkinson Smith, guest speaker; J. H. Bronck, director; W. J. Vereen, president of the association; Joseph Haspel, director and chairman of the resolutions committee; George H. Barnes, vice-president.

Two speakers were scheduled on the opening program. The first speaker, J. Hopkinson Smith, member of the firm of John A. Cairns & Co., New York, spoke on the subject of possibilities of increasing the consumption of cotton wearing apparel through acceptable styling. Major Vere Painter, Quarter-Master General's Dept., Philadelphia, spoke of some of the problems ahead in clothing the army and indicated ways in which these manufacturers could cooperate in the field of national defense.

At the Tuesday luncheon, A. W. DeBirney, assistant general counsel of the Federal Trade Commission, Washington, D. C., discussed in a very informal way some of the situations members might be called upon to meet from time to time, and pointed out proper methods of procedure. "The service of the counsel is always at your disposal for private discussion of any special problems that arise," he said. His talk was based on hypothetical cases involving the application of the Robinson-Patman Law.

In five strong resolutions, unanimously adopted, the association went on record as (1) supporting all constructive efforts in defense of the nation; (2) endorsing all legal efforts of the Administrator to enforce the Wage and Hour Law impartially; (3) urging modification, or withdrawal, of Wage and Hour Administrator's order, effective July 15, applying to apparel industry, which was strenuously opposed by this industry in the South; (4) supporting the passage of the amendment to the National Labor Relations Act as proposed by the Smith Congressional Investigating Committee; and (5) approving the Walter-Logan Bill now pending in Congress.

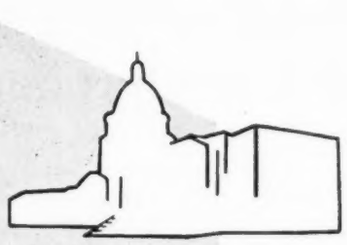
SIXTY ATTRACTIVE EXHIBITS were set up for the benefit of visiting garment manufacturers, of whom a large number from various States attended. A survey of the roster indicates visitors from 12 different States as well as from Canada.

Entertainment of a less serious nature was the buffet stag-supper served Monday evening and the dinner dance in the Ansley Hotel Tuesday night. These functions were complimentary to the members of the Garment Association, tendered by the Atlanta Textile Club, Robert McKay, president.

All officers and directors of the association were enthusiastically re-elected to serve an additional term—no traditions being smashed in this action. Those so honored were W. J. Vereen, Moultrie, Ga., president; Geo. H. Barnes, Andalusia, Ala., vice-president; Sidney Rosenblum, Louisville, Ky., vice-president; B. H. Wilkins, Jr., Tullahoma, Tenn., secretary-treasurer; W. Gordon McKelvey, Nashville, Tenn., counsel.

Wool Labeling Bill Advances

Opp Mills case taken to Supreme Court; Help for cotton market; New Secretary



McGRAW-HILL WASHINGTON BUREAU

PAUL WOOTON, Chief Correspondent
Blaine Stubblefield
Irvin D. Foos Carter Field
Robert Colborn M. G. Maury

WOOL LABELING BILL: The House passed the Schwartz-Martin wool labeling bill Aug. 30 and sent it back to the Senate, which had passed a somewhat different version, for re-consideration. As this was written, it was up to the Senate to decide whether to vote on the bill again, or send it to conference committee. Wool specialists in various Government departments expressed the opinion that the bill would become law. Representatives of the wool growers association, which has been pushing the bill for years, also said they were confident of its enactment. The National Defense Commission, one of whose problems is to plan against wool shortage in case of emergency, did not seem to have intervened in any way. Controversial points to be decided by the Senate, or the conference committee, were the definitions of "wool", "repossessed wool", "reused wool", and "wool product." Observers said that proponents of the bill are aiming to fix the definitions so that "wool" will mean virgin wool. The law would be administered and enforced by the Federal Trade Commission, under its trade practice procedure.

WAGE-HOUR CHALLENGE: First challenge to the constitutionality of the wage-hour act will confront the Supreme Court when it convenes in October. Opp Cotton Mills, Inc., together with 17 other southern mills, have asked the high court to review a Fifth Circuit Court of Appeals' decision of last April affirming the administrator's determination of a 32½c. hourly wage minimum for the cotton and allied branches of the textile industry. The Wage-Hour Division is expected to join in the request for a review.

The southern firms are making a two-headed attack: first on constitutionality of the act itself, and on legality of the procedure by which industry wage orders are issued. In the latter connection, the charge is made that the cotton-textile industry in the South was not given proportionate representation on the industry committee, and that the final wage order did not provide for classifications or differentials, without which it will be "impossible for them (the petitioners) and other small cotton mills of the deep South to operate . . . ."

In its decision, the Circuit Court unanimously upheld legality of the procedure and affirmed the wage order.

WAGE-HOUR DEVELOPMENTS: The Wage-Hour Division has recently carried its policy of administrative decentralization into new fields, with an order by Col. Philip B. Fleming, administrator, granting full authority to seven of the agency's 14 regional directors to act as his representative in issuing or denying certificates for handicapped workers. The same authority will be extended the other directors as soon as they can be trained to handle the work.

Meantime, other wage-hour developments of interest to the textile industry were:

(1) New regulations applying to employment of learners were promulgated. under which changes were made in the provision for learners to replace normal labor turnover.

(2) The division instituted the largest number of cases in the courts in its history during July, and likewise closed more cases. The number filed for the month was 182—more, incidentally than for the entire year 1939. Textile cases were few, official said.

(3) In a recent radio address, Colonel Fleming said he still saw no reason to alter his report to President Roosevelt in July, to the effect that employers in defense industries were not having trouble operating under the law. "Relaxation of the wage-hour law at this time is neither necessary nor desirable," he said.

(4) The division is in the midst of a concerted inspection and compliance drive for five industries, including the hosiery and wool manufacturing industries. More than 200 inspectors have been assigned the special task of checking the records of 5,000 establishments to determine whether the wage-hour law is being observed. An additional assignment, those inspectors who visit seamless hosiery establishments are making a spot check of employment there. Object of this employment poll is to determine whether the number of workers has decreased since September a year ago when a 32½c. hourly

(Continued on page 142)

THE CHANGE IN CHIEF at the Department of Agriculture is considered more theoretical than real. Claude R. Wickard (at left) whom President Roosevelt appointed to succeed Secretary Henry Wallace, Democratic vice-presidential nominee, is in the job only temporarily, as Washington sees it. If Roosevelt should win a third term, it is thought likely that Wickard would hand in his resignation—as all Cabinet officials do at the end of an Administration—and a permanent Secretary would be named in his stead. Wickard is a strong Wallace man and probably will make few changes in policy. Paul Appleby (at right), Wallace's assistant for many years, steps up to Wickard's old job as Under-Secretary.

Third Shift a Frankenstein

Full-fashioned hosiery men face market that can't absorb full 2-shift product

By ROBERT TOWNE

NEWS FLASH! . . . FEMININE AMERICA AGREES TO DOUBLE UP ON HOSIERY PURCHASES. . . . EVERY WOMAN WILL BUY AT LEAST TWO DOZEN PAIRS OF FULL-FASHIONED STOCKINGS DURING THE COMING YEAR . . . . 80 MILLION DOZEN PAIRS TO BE CONSUMED . . . . EXTRA!

IF THE NEWS contained in the above extravagant and wholly imaginary flash were authentic, it would mean that the nation's full-fashioned hosiery industry could adopt and successfully carry out a three-shift plan of knitting-mill operation. As it now stands, however, some 40 million American women, the portion of the female population that consumes the bulk of the full-fashioned hosiery output, purchased only 43,078,000 doz. pr. of full-fashioned stockings last year. And that figure represents about one dozen pairs of stockings per woman for the year, or a mere half-way step toward the estimated possible production of the full-fashioned industry running 24 hours a day.

With most mills in the industry now operating on a double-shift basis, but running only part time to produce the hosiery needed for the current demand, it is obvious why industry-minded producers hesitate about going to heavier production schedules. These ethical producers curtailed production almost to actual requirements during most of 1939, stepping up production only during the peak periods which occurred in the months of April, August and October. This sound practice kept surplus mill stocks fairly low for the year and greatly helped maintain semblance of a price structure. Some producers, on the other hand, in an effort to obtain more than their fair, normal share of the over-produced hosiery market, operated their mills steadily on a 24-hour basis, thereby figuring lower costs and generally underselling all competition. In so doing, these producers have created a tight competitive situation; a situation that mill men agree is fast undermining the hosiery price structure.

That the multiple-shift movement has been growing, there is little doubt. Competent observers claim that 10% of the machine capacity of the industry is right now operating on the 24-hour basis. Many reputable producers, some of them the largest in the industry, claiming they must meet what they term to be unfair competition, are also planning 24-hour schedules. What may happen to full-fashioned hosiery if the multiple-shift movement gains widespread acceptance can well be left to conjecture. There are many, however, who are sure the movement will build a Frankenstein that will ultimately rise up and bankrupt a great number of mills in the full-fashioned field.

Textile industries other than the full-fashioned have also been confronted with problems relative to multiple-shift operations. Wool, cotton, clothing, in fact nearly all the textile trades have had, at one time or another, to cope with the problem. Let us take a look at the records of a few of them.

Take, for example, the cotton industry: In cotton mills during 1939, there were an estimated 25 million spindles in place. Operating three 40-hour shifts per week with this amount of spindles, the cotton industry could run 3 billion spindle hours each week. In a 51-week year, holidays excluded, it would run 153 billion spindle hours. In 1939, an exceptional year for cotton, only something over 92 billion spindle hours were needed to meet the demand. So it is easy to figure what might happen if the cotton industry as a whole went into year-round three-shift operation.

On the other hand, cotton mills could not have made deliveries on the heavily-concentrated buying of cotton goods that occurred last September and October if they had not temporarily operated on multiple-shift schedules. However, at the present time, diminished demand has brought about considerable decline in multiple-shift operations in cotton mills.

* * *

Emergencies often render articulate those who would otherwise be limited in audience to their friends or their community. Here is a spokesman for the hosiery industry, who, in 20 years, rose from knitter to superintendent. He is not alone now in viewing three-shift operation as a menace. His article sets forth the gravity of the situation and his figures are simple and convincing.
—Editor.

More closely related to the full-fashioned hosiery industry, however, are the problems of the industry represented by the National Association of Wool Manufacturers. In a speech before the wool manufacturers, Arthur Besse, president of the association, brought out facts so pertinent to hosiery conditions that hosiery producers might do well to consider Mr. Besse's broadminded advice. He pointed out that a high percentage of the wool industry is too absorbed in the struggle to obtain an impossible share of a limited market to be able to realize just how limited that market really is. If all of the looms in the wool industry operated steadily on a *single*-shift basis, their output would equal substantially the greatest amount that that industry has been called upon to furnish during any of the last five years. Wool goods producers, however, not unlike some hosiery producers, base their offerings on the expectation of the double run which never materializes. It is by this refusal to appreciate the limitations of any given market that mill men give buyers every reason to believe that goods can be supplied more rapidly than they can be consumed. And such a situation in any industry must continue to affect price structure just as long as every mill man continues to strive for excess-shift operation.

Hosiery producers might do well to consider another of Mr. Besse's suggestions, namely, that production and offerings be planned with a more realistic understanding of the amount of goods which can be sold. "Costing on a single-shift basis of operation must become the rule rather than the exception," firmly stated Mr. Besse. And such a procedure, if practiced by hosiery mill operators, might well bring the hosiery industry out of the clouds of impracticability into the realm of substantial achievement.

Now let us consider just how this single-shift costing basis might affect the full-fashioned hosiery industry. Such a costing method would not limit a mill to operating one shift; neither would it involve a limitation on the

amount of business any mill could take; nor would it give any mill a guarantee of any particular amount of business. It would, however, mean that mills which are able to obtain enough business to operate their equipment more than one shift and show a performance above the average, would and should be properly rewarded for any superior styling, salesmanship, or manufacturing method that made the showing possible.

From within the hosiery industry itself there has recently been issued a call for sanity in costing basis. In its "Special News Letter," Dec. 6, 1939, the National Association of Hosiery Manufacturers referred to the fact that the cost manual prepared by the Hosiery Code Authority in NRA days and issued with the approval of the Administration, recommended a "normal capacity" equivalent to 75% of the maximum working hours—and the association suggested that such normal capacity furnishes a sound basis on which management should estimate its costs and therefore price its goods.

This same association has consistently opposed three-shift operation. As recently as April 17, 1940, at its annual meeting, Earl Constantine, president of the association, concluded an analysis of this trend by asking this embarrassing question: "If there is no sound basis on which we may expect substantial increases in the demand for our product, what is there to be gained, as an industry, by materially increasing our productive capacity when we have already remained in a buyer's market too long?"

In fact, not only employers, but the employees, as well, are opposed to the third-shift basis of hosiery plant operation. The American Federation of Hosiery Workers, knowing the dangers involved, has consistently fought multiple-shift extension as erroneous and harmful to their industry in the long run.

Today, according to latest estimated figures, there are approximately 132 million persons in the United States. Something less than half this number are females. We assume that 60% of the total female population, the 40 million women in the 15 to 70-year age range, purchase most of the full-fashioned hosiery produced in this country, which according to last year's figures amounts to about one dozen pairs per woman annually. The problem seems to be: How can full-fashioned hosiery producers induce, cajole, or entice milady into doubling up on her purchases of full-fashioned hosiery?

Some claim that greater production and lower cost per unit would, as a matter of course, bring hosiery prices down to a point where every woman would buy double the amount of hosiery she is now buying. However, producers who figure costs accurately could not at present make any substantial reduction on selling prices even though they gained a 10 to 12% saving on overhead by operating their mills three-shift, since the present margin of profit is so small that any additional profit accruing by virtue of multiple-shift operation would, of necessity, be pocketed by the producer and not passed on to the consumer. Only if mills running old equipment could rehabilitate and install new high-speed equipment, which would considerably reduce present labor costs per unit, could prices to the consumer be lowered.

Can the American woman be enticed to buy twice the volume of hosiery she's been accustomed to buy?

Photo by Armstrong Roberts

But then, if all of the full-fashioned hosiery industry's machines that are ten years old or older, machines which are said to represent more than half of the industry's 16,000 knitting machines, were scrapped and replaced by new high-speed equipment, and that modern equipment were to operate on a three-shift basis, full-fashioned hosiery production might well soar to over 100,000,000 doz. pr. annually, and this figure represents a consumption of hosiery fantastic in amount and beyond any present or near-future possibility.

We must also consider that women today are not inclined to wear hosiery for every occasion as was the case some years back. Little full-fashioned hosiery is today worn for sports; school girls under 15 years represent a bare-legged multitude. Coupled to this, synthetic yarns which have recently made their debut in the hosiery field, are claimed to outwear silk, which, if true, will certainly not tend to increase the sale of hosiery.

How, then, can American women be induced to purchase a greater amount of full-fashioned hosiery? By more clever merchandising tactics? By super styling? By superior salesmanship? By high-pressure advertising campaigns? Surely the answer has not as yet been made and until such a time as it is, hosiery producers might do well to figure not how each can get the biggest share of the present limited market, but how every mill in the industry can cooperate in balancing the present production to meet the current demand.

Ill-considered production will lead to futile and harmful standards of performance which will eventually debilitate the hosiery industry and cast it into a state of doldrums from which it might experience difficulty in extricating itself.

To those producers who maintain that they are economically forced to operate their equipment on a 24-hour schedule we say, try the multiple-shift plan. . . . let the stockings fall where they may.

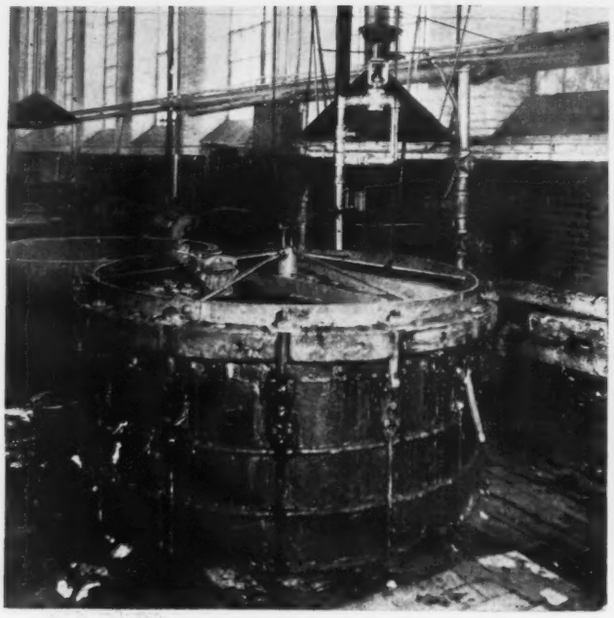


Fig. 1. Most of the wool is stock dyed, in nine machines similar to this one

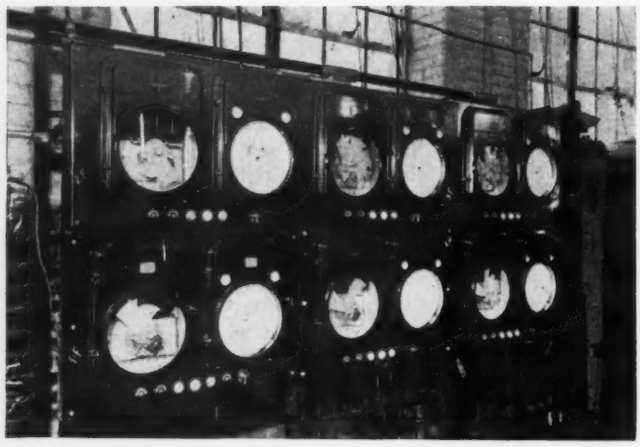


Fig. 2. Control of dyeing is the job of these recently installed instruments, in which cut-out cams regulate operating cycles

Twenty-Year Modernization Habit

Pays dividends at Maryland woolen mill; keeps plant running, good times and bad

THE FELLOW WHO SANG to his girl, "You're getting to be a habit with me," had nothing on the management of W. J. Dickey & Sons woolen mill at Oella, Md. Modernization has been a habit with this mill ever since 1918, when a fire which destroyed practically the entire plant necessitated installation of new equipment—a process which has been going on, almost continuously, ever since. That modernization is what is commonly known as a "good" habit is borne out by the fact that the mill was able to run along pretty much as usual all through the recent years of depressions, recessions, moratoriums, and what not. Further, it was able all this time to carry on without interruption its policy of continuous improvement. Result: W. J. Dickey & Sons are just now on the verge of completing a modernization cycle which will bring the plant's entire machine complement up to the minute.

Considerable interesting work has been carried out in the dyeing department. Most of the company's wools are stock dyed; for this work nine machines are in place. Five of these were supplied by Hussong-Walker-Davis Co., and installed last year. There are also two Hussong vats purchased about five years ago, and two Franklin Process Co. vats which went in in 1934.

All these raw-stock dyeing machines were recently equipped with Bristol Co. recording and controlling instruments. These devices, by means of cut-out cams, control the operating cycles of the dye vats. At the same time the recording system provides a permanent record of the amount of time consumed by each operation. Biggest advantage of this dual control is, of course, to assure absolute uniformity of processing every lot of a given shade or stock. In addition, production increases are made possible and quality of the dyed stock is said to be improved.

Fig. 3. Cards are being changed over to tape-condenser operation

Two Cleveland tramrail cranes running the length of the dyehouse reduce manual handling of wool in process.

From the dye vats, the wool goes to a C. G. Sargent's Sons raw-stock dryer. Bristol controlling and recording equipment has recently been put in use here also, and installation of latest-type fans and heat coils is expected soon to make possible a 50% increase in production.

PREPARATORY DEPARTMENTS of the Dickey mill have installed five Kitson Saco-Lowell pickers and one Davis & Furber picker. There are also three Fearnaughts: two Davis & Furber, one Curtis & Marble. Each of these is equipped with a Curtis & Marble Truslow blending attachment. In the card room there are thirteen 48x60 in. cards, all Davis & Furber. There are also three Whitin 60x60 cards. The company began change-over from ring doffers to tape condensers on its cards as far back as 1922, and now has on order five of these, which will make the mill's cards 100% tape equipped.

In 1938, humidification systems were

installed in both spinning and card rooms by American Moistening Co. At the present time, experimental installations of General Electric fluorescent lighting are being tried out over the condenser ends of several cards.

Introduction of ring spinning began in 1933, when four Whitin 96-spindle frames were installed. Since that time, change-over from mules to frames has continued; at present, of the thirteen mules which at one time produced all the company's yarn, only five remain. And ten more Whitin frames, now on order, will soon replace them.

Bobbins from the ring frames contain as much as 1¼ lb. of yarn each. For winding of filling from these bobbins, the company has been experimenting with a 6-spindle unit of the Schweiter automatic winder, obtained from Whitin. So satisfactory have its tests been that 60 additional spindles have been ordered. These, it is planned, will handle all filling winding from spinning bobbins. The low number of spindles required is due, in part at least, to the wide speed differential between Schweiter spindles and those of the type now in place: Schweiter—4,200 r.p.m.; older type—1,800 r.p.m.

Warps are made direct from spinning bobbins, through the medium of a T. C. Entwistle creel, and a high-speed section warper supplied by Whitin.

In the weave room, approximately 100 looms are in place. Of these, 24 are Crompton and Knowles Model W1 automatics, installed in 1929. In 1932, a section of 30 4x4's was changed over to automatic operation. The following year saw installation of six new C&K W2's. Two years later, in 1935, a group of eight W3 looms was installed; four of these are of the convertible type. In 1938 twelve more W3's were put in place. Four looms are equipped with Baker three-shuttle-mix devices, and eight others have Stevenson five-shuttle-mix attachments. All the looms will take beams with 28-in. heads.

Lighting in the weave room is by means of General Electric mercury vapor lamps, installed three years ago.

THE FINISHING department contains four latest-type James Hunter fulling mills; one of these, installed in 1937, is of the type in which four differently constructed fabrics can be processed at the same time.

Five James Hunter cloth washers are utilized. Some of these were installed early this year; the others, in 1939. A piece carbonizer, produced by the same manufacturer, was put in service in 1932, and a second section added to it in 1938. A Gessner vacuum extractor and scutcher was installed in 1932.

For inspecting finished cloth, the mill has four perches. Modernization has had a place here, too: one of these is a Parks & Woolson power perch bought about a year and a half ago.

Two waterwheels, which delivered power to the mill for 60 years, were retired from regular service in 1938, although one is retained as a standby. In their place an S. Morgan Smith adjustable-blade hydraulic turbine was installed. This drives a G.E. generator and produces more power than the two old waterwheels combined.

The G.E. panel through which this power is controlled and distributed is divided into seven sections. One of these is connected to the new turbine; a second, to the standby waterwheel; a third, to the local power company, which is cut in at any time low water or heavy loads necessitate more power than can be generated at the mill. The other four sections divide the mill into as many parts, making it possible to transmit power to the various departments when and as needed.

For process steam and heating purposes, two Dillon boilers of 175 hp. each are used. These were augmented about ten years ago, by a Keeler 350-hp. boiler. Brown Instrument Company recorders are used in the boiler room for keeping track of feed water used and temperature of return.

The mill has also just installed a new automatic telephone system and a code-calling system which covers the entire plant.

MANAGEMENT of W. J. Dickey & Sons has been in the hands of the same family for more than a hundred years. First there was Wm. J. Dickey, who started the enterprise in 1838. Then, his sons, George and Wm. A. Dickey, carried on. Today, two sons of William A. head the firm. They are Wm. A. Dickey, Jr., president; and Harry S. Dickey, secretary and treasurer. And last year Wm. J. Dickey—named for his great-grandfather and the fourth generation of the family in the business—completed training at Philadelphia Textile School, and began work in the mill. He it is, in fact, to whom we are indebted for many of the photographs used with this article.

Management modernization has kept pace with machine modernization. For instance, there is a kinship between executives and employees which would be the envy of many a personnel director. Conditions under which the 400 employees work are good; strikes are unheard of. Monthly safety meetings are held with foremen; these are supplemented by semi-annual departmental safety meetings with operatives.

A wide-awake employee athletic association sponsors baseball and basketball teams. The latter group plays many of its games in a Community Hall built by contributions of both employees and management. Dances, carnivals, and other get-togethers also are held in the Hall.

To conclude this story, we return to the beginning. The magic of the modernization habit, which enabled W. J. Dickey & Sons to display the "Business as Usual" sign all through the recent lean years, is still holding good. Production in 1939 was 3,000,000 lb. of yarn spun, and 1,750,000 yd. of cloth woven. In 1940, it now appears fairly certain, this mark will at least be equalled and probably exceeded.

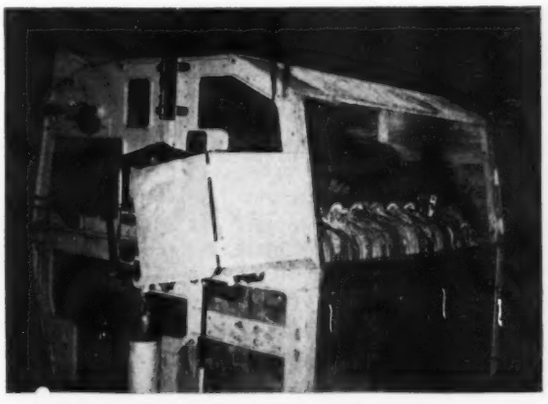


Fig. 5. For scouring cloth, five new washing machines are utilized

Fig. 4. Bobbins from ring spinning frames contain 1¼ lb. of yarn each

Problems Inside Water Pipes

Proper treatment and control increase life and preserve capacity of mains

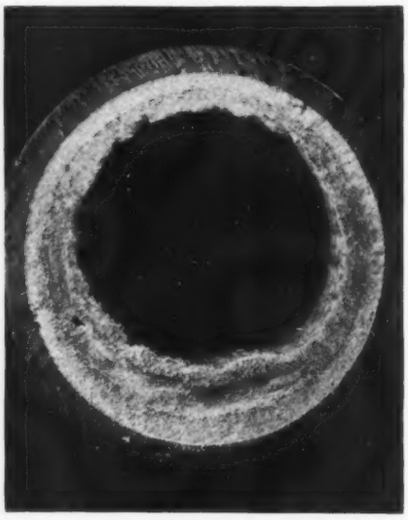
By HUDSON NIX

AN OPERATOR of a water-purification plant cannot consider his job complete after he has coagulated, filtered, sterilized, and pumped his product into the mains with sufficient pressure to carry it to the consumer or industrial plant. He must know the action of the water in the cast-iron or steel pipes as it travels to its point of service. Otherwise, the condition of the main or the water is likely to be seriously impaired by corrosion or tuberculation, which reduces strength and life of mains and increases pumping costs; the carrying capacity of the main may be reduced by the deposition of scale and sludge; or serious clogging may result from growths of crenothrix. Too, water may be stained by rust, making it especially objectionable in a textile supply.

Recent developments in the water works field offer encouragement to the operator who may be troubled by any of these problems. Non-corrosive pipe has come into service, and steel and cast-iron pipe can now be purchased with cement or other non-corrosive linings. Perhaps the greatest work in prevention of corrosion is the perfecting of chemical treatment in existing mains, and development of simple tests whereby the small plant operator can tell at all times if the quality of water leaving the plant is such that it will reach its destination in the same condition without damage to the distribution system. This article will enumerate leading causes of trouble inside water mains and discuss principle methods employed to correct and prevent these troubles.

Tuberculation, which is a combination of corrosion and incrustation, is probably the greatest source of trouble inside a distribution system. Tubercules are cone-like and grow by the addition of concentric layers, finally clogging the main entirely if conditions are favorable to their growth. These growths develop from iron-forming or iron-consuming bacteria, such as crenothrix. This formation may be expected in mains where water is slightly acid, with a pH of 7 or less, and contains an excess of 2 parts per million of iron in solution. Its control is effected by removal of iron from the supply or by increasing pH to the extent that a coating of calcium carbonate is formed inside the main. Strong applications of chlorine may be used to destroy the growths if adequate means of flushing are available to prevent the resulting stained, turbid water from entering the industrial or drinking supply.

In prevention of corrosion too much importance cannot be attached to a complete water analysis revealing dissolved oxygen, total fixed solids, hardness, free carbon dioxide, alkalinity, pH, and organic content of water supply. Factors which favor corrosion



No. 1—Cross-section of pipe showing decreased capacity resulting from improper water treatment

may be listed as presence of oxygen and carbon dioxide, and low hardness, alkalinity, and pH; a high hardness, pH, and alkalinity can usually be depended upon to retard corrosion. The most common procedure in corrosion control is inducement of a protective coating inside the pipe line. This is usually accomplished by chemical treatment with such alkalis as lime, soda ash, caustic soda, and, lately, with sodium silicate or sodium hexametaphosphate; in a few cases, linings of cement have been mechanically applied to mains that are in service.

But the most common practice is the use of alkalis to maintain a high pH, which favors a deposition of calcium carbonate to protect the metal surface from the water. Until recently, maintenance of a pH between 8.0 and 8.5 was considered a reliable corrective treatment. While in most waters this treatment will keep down corrosion causing "red water", serious reduction in carrying capacity of the main is likely to result where chemical treatment is not carefully controlled according to condition of the water. The practice now recommended consists of supersaturating water with lime or lime-soda until a protective coating of calcium carbonate is laid down. After this is accomplished, the water is maintained in chemical balance to prevent the coating from being dissolved or augmented in thickness. Chemical balance is maintained by careful pH control, based upon results of the simple marble test long familiar to water plant operators, or by use of an easily-built continuous stability and corrosivity indicator.

THE MARBLE TEST is made by adding an excess of powdered calcium carbonate to a sample of water, which is agitated from time to time until no further change in pH and alkalinity occurs. Final pH and alkalinity readings denote saturation point of the water. The dosage of lime or soda ash is then added on a plant scale to bring the filtered water to the point of equilibrium discovered by the above test. Such a water will not dissolve or add a deposit to the protective coating previously formed, since the calcium carbonate "hunger" has been added without any excess.

The continuous stability indicator (see sketch) has come into use to eliminate the necessity for making frequent tests in plants where water is subject to changes in alkalinity. The device consists simply of two glass or copper tubes 2 in. in diameter and 6 to 8 in. long (one filled with finely ground limestone, marble, or chalk; the second, with limestone or marble chips); plugs of glass wool or other supporting and straining material for both ends of each tube; four rubber

stoppers; control cock; and sufficient glass or rubber tubing to make connections from water line to sampling flask. This device is mounted on a board or wall near the laboratory sink. The flow should be adjusted so that water passing through the carbonate material has a contact period of at least 2 hr. Tests on water coming through this device reveal the pH at which the water must be kept to insure an equilibrium point throughout the distribution system.

For example, if the pH of the water entering the indicator is 8.1 and that of the effluent is 8.4, this shows that the carbonate hunger of the water has not been satisfied by plant treatment. On the other hand, if the pH of the water is lowered by going through the indicator, this reveals a supersaturated or scale-forming water, in which case plant treatment should be reduced.

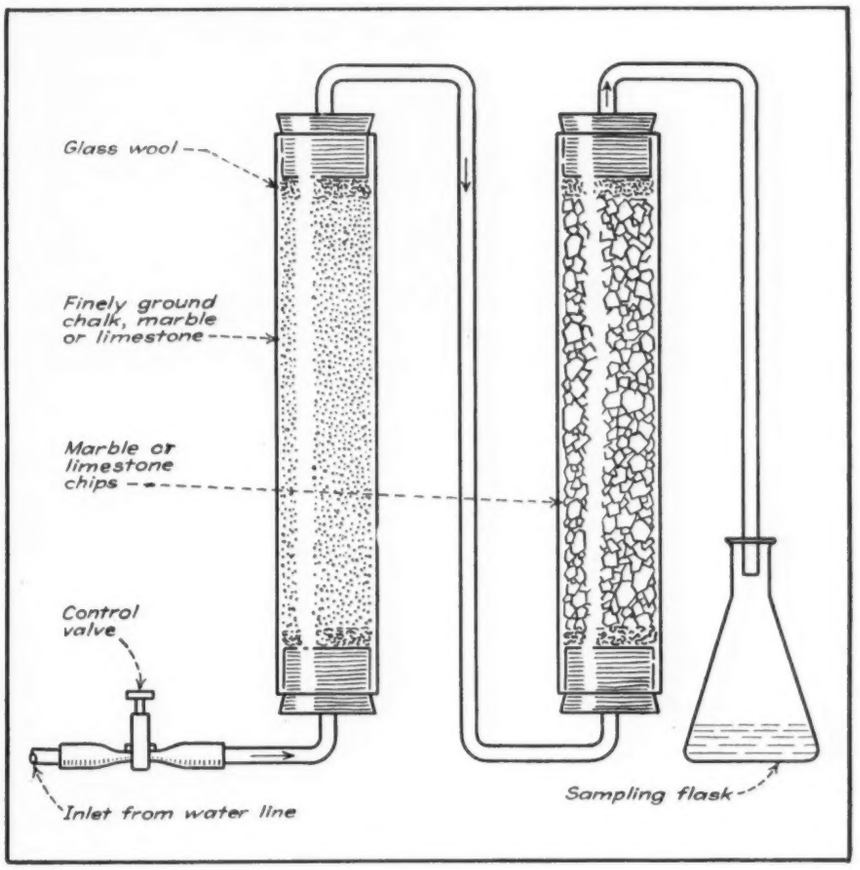
SILICATE TREATMENT. While the method just described is the most common one for preventing corrosion in use today, recent experiments have shown that this procedure will not always guard against tuberculation, because the protective coating may contain soft spots which are not impervious to water, and tubercules may start from tiny corroded sections of the metal. In a number of both municipal and industrial water plants over the country, sodium silicate is being used for control of corrosion. In many cases it is used in conjunction with the usual alkali treatment. The silica thus deposited gives firmness to the coating and replaces much of the silica content of the water removed by lime or soda ash treatment. The usual application of sodium silicate is 20 to 30 p.p.m., although dosages much larger have been used with favorable results.

An advantage in the use of the silicate treatment over other processes is that the amount of silicate required is independent of the hardness or carbon dioxide content of the water, while neither soda ash nor sodium hydroxide can be expected to be efficient corrosion inhibitors in water containing less than 30 p.p.m. of calcium carbonate. Most waters contain this amount of hardness, but some do not; and injection of the required amount of carbonate might be objectionable, due to the resultant increase in hardness. Silicate treatment is especially desirable in such waters because is does not increase hardness. Therefore, this method of corrosion prevention is winning favor in industries where a soft process water is desired, and especially in instances where the zeolite method of softening is used. Too, the silicate treatment is attractive to small plants which do not have means of analytical control, and to plants operating largely by remote control or for long periods without attention.

THE NEWEST CHEMICAL TREATMENT in corrosion control involves addition of from 1 to 5 p.p.m. of sodium hexametaphosphate to water going into the mains. Use of this chemical for corrosion control will be surprising to many, as its chief value is in prevention of the deposition of calcium carbonate, which is the purpose of most other alkali treatments. Its use in corrosion control is based on the fact that it is strongly adsorbed by metals and metal oxides, thus forming a thin film which helps prevent corrosive attack upon the metal. A few water plants are using hexametaphosphate alone for corrosion prevention, reporting good results even at pH values as low as 6.0. However the most common use of this chemical is to prevent excessive deposits of scale, especially in hot-water systems. It has demonstrated remarkable value in treatment of water for high-pressure boilers. Treatment with this chemical is also of great value in industries where the pH value of process water must be in excess of that which represents the equilibrium point. This is usually between 8.0 and 8.5, but the use of from 1 to 2 p.p.m. of sodium hexametaphosphate, prevents deposits where industrial processes require a pH value of 9.0 or even higher. Producers of silicate and hexametaphosphate have published a number of bulletins giving more detailed information.

The lime or lime-and-soda method of corrosion prevention is usually the least expensive treatment. However, neither cost nor effectiveness of any method can be determined without a thorough study of raw water supply, type of plant, and purpose for which the finished water is to be used.

With the laying of mains that can usually be depended upon to last a lifetime or more, it is too often thought that water-distribution problems are buried. This is rarely the case, and constant attention to the condition of water mains is as much a part of progressive water plant operation as proper maintenance of pumps, motors, and chemical feeding equipment. Tuberculation, corrosion, and clogging problems are so numerous that every water system is a potential victim. The alert operator does not wait until the carrying capacity of mains is reduced or until complaints are heard from consumers, but detects trouble as it appears and meets it with corrective measures best suited to his plant and conditions.



No. 2—Enslow continuous stability indicator

FIXING HOSIERY MACHINES

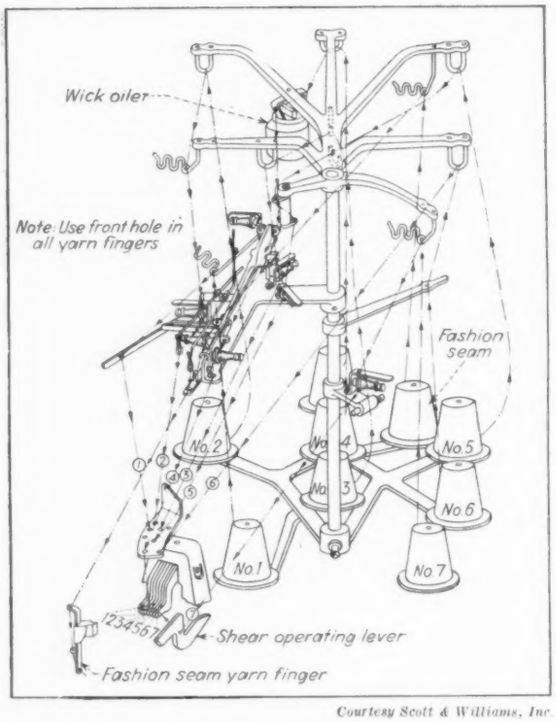
CIRCULAR MACHINES—Chapter IV. Checking Yarn Stands

BY JULIAN W. HUGHES

AFTER ALL THE CONES of yarn have been placed on the yarn stand and the machine has been threaded and is ready to start, much trouble may be avoided if the fixer checks the path of each yarn from the time it leaves the nose of the cone until it passes through the eyelet of the yarn finger. On its way to the needles the yarn passes through guide hooks, tension disks controlled by springs, take-up devices, and numerous eyelets. Usually these devices give no trouble. Under certain circumstances, however, one or a number of them may give rise to defects in the hose. Even if no immediate trouble is apparent during knitting, it may show up in subsequent operations.

The yarns as they pass over the guide hooks, take-up guides, and eyelets will eventually wear grooves in the metal if these exposed parts are not kept polished with an abrasive. Under ordinary conditions these parts, particularly the eye holes, should be polished with crocus cord every time the machine is overhauled. If this is not done, the grooves may become deep enough to bruise and weaken the filaments of silk and rayon yarns. For example, in one mill which was using a pigmented rayon, it was discovered that the yarn had worn tiny grooves and burrs which cut into the filaments. While the yarn stood the strain of knitting, and the damage was scarcely noticeable in the gray, during the wet processing of the hosiery the slightest tension caused the yarn to break at the places where it had been injured and make a run in the fabric. It was only after every hole through which this yarn passed had been reamed and a porcelain eyelet had been inserted that this trouble was eliminated.

At times undue wear of the eyelets is caused by too much pressure on the yarns through the tension disks. The pressure of these disks is produced by means of coil springs which are regulated by thumbscrews. It is very easy to put too much pressure on some yarns, especially silk and rayon. Silk yarn is protected by a coat of gum, but too much pressure will cause the gum to come off and cling to the metal surface. Under the same condition continuous-filament rayon yarn is likely to wear the surface more quickly. It is advisable, therefore, to run silk and rayon yarns with as little tension as possible.



Courtesy Scott & Williams, Inc.

Fig. C5. Yarn stand of Scott & Williams seven-finger Model K machine illustrating method of threading yarn. Use No. 1 finger for the double sole; No. 2 finger for the tapered heel; No. 3 finger for the outside welt; No. 4 finger for the heel and toe; No. 5 finger for the inside welt; No. 6 finger for the picot or colored stripe in welt; and No. 7 finger for the leg and foot

Circular knitting machines are frequently moved from one place to another. It sometimes happens that while the machines are being moved the frame on which the cones rest is turned slightly on the vertical rod. This will throw the cones out of line with the yarn guides above, and the yarn will tend to drag as it unwinds. The drag may be sufficient to produce distorted stitches. Accordingly, the fixer should note how the yarn unwinds from the cones after a machine has been moved. If the yarn rubs against one side of the cones more than the other, the stand should be swung around until the yarn comes off freely and then the set-screw should be tightened securely.

THREADING THE MACHINE. A knitter will soon notice it if a machine is threaded incorrectly. However, a standard system for threading will save time and reduce the chances of error. Fig. C5 represents the yarn stand of the Scott & Williams seven-finger Model K machine and illustrates a good standard system for threading.

It will be observed from the illustration that the cones which supply the bulk of yarn are placed near the front where they will be more accessible to the knitter, while those which are drawn upon less frequently are placed to the back of the stand. The fingers for feeding the various yarns to the needles are threaded from left to right when the knitter is facing them, as follows: No. 1 finger for the double sole; No. 2 finger for the tapered heel; No. 3 finger for the outside welt; No. 4 finger for the heel and toe; No. 5 finger for the inside welt; No. 6 finger for the picot or colored stripe in welt; and No. 7 finger for the leg and foot.

Similar systems can be set up for other types of machines. The following system for example is suitable for a five-finger machine set up to knit crew socks. No. 1 finger on the left would be threaded for the body yarn; No. 2 finger for a colored horizontal stripe yarn; No. 3 finger for the reinforcing yarn in the heel and toe; and Nos. 4 and 5 fingers for two more stripe yarns of different colors.

When all machines on one style are threaded up exactly alike, it simplifies matters considerably and avoids much unpleasantness between knitters and fixers. Again, when each finger is assigned to a specific task, style changes can be made more quickly. For these reasons, it is quite important to standardize the threading operation.

LUBRICATION OF YARN. Ordinarily, the natural moisture in thrown silk and

other yarns is sufficient for knitting seamless hosiery. Occasionally acetate rayon will not plate satisfactorily unless it is conditioned with a softening oil. Some mills use kerosene for soaking and some use a mixture of kerosene and olive oil. Both give good results as far as the knitting is concerned, but kerosene is likely to interfere with the dyeing. It is preferable, therefore, to use one of the soaking solutions now available which are prepared especially for acetate yarn.

Since the yarn for heel and toe is knit in the hosiery intermittently and in small amounts, this yarn is likely to become too dry to knit. To offset this dryness a wick oiler (shown in Fig. C5) is provided for the heel and toe yarn to pass over on its way to the needles. A good softening oil to keep in this cup is a solution of olive oil soap, borax, and glycerine. This will increase the hygroscopicity of the yarn.

FULL-FASHIONED MACHINES—Chapter III. Needle-Bar and Presser

BY WALTER A. SIMOND

THE UP-AND-DOWN MOVEMENT of the needle bars is controlled by the needle-bar cams, levers, shaft and needle-bar arms. The in-and-out movement of these bars is controlled for knitting by the presser cams from the time the top of the needles are at the top of the sinkers until they rise to about the same position. The upper part of the needle-bar in-and-out movement is controlled by the stitch and rocker cams through the regulating shaft and its levers. A diagram (Fig. F3) showing the cross-section of needle-bar motion is adapted from the book, "Knitting Full-Fashioned Hosiery," by Miller.

In realigning the needle-bar cams it is only necessary to maintain the original setting, which is easily done, since it is seldom that more than one cam will be found out of place from slipping on the shaft. With regard to the cam bits, it is best to move them, if necessary, as little as possible, and this is true of the bits in all the cams on the camshaft. The shape of the bits ought to be kept, as nearly as possible, like that of the original bits. Bumping the cam rollers over high or low cam bits is harmful to the fabric, and the machines will wear out more rapidly, especially with modern high-speed machines.

Adapted from Miller's "Knitting Full-Fashioned Hosiery"

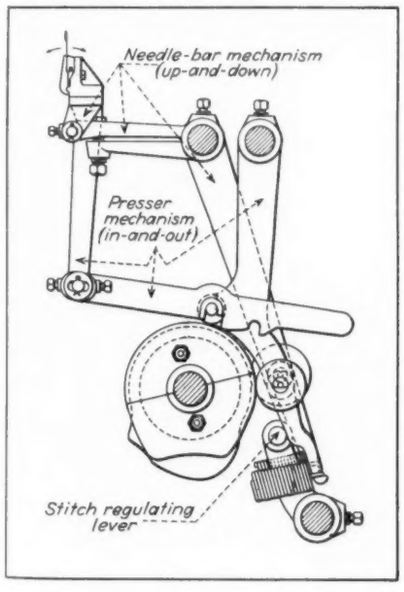


Fig. F3. Cross-section of needle-bar motion

A rare cause of fabric cutting is to have the taper pin through the needle-bar lever and its shaft come loose. A more common cause of cutting is that the needle-bar springs weaken and allow the needle-cam roller to leave the cam when it passes over the high bit. Holding a strong light down where it will shine between the roller and the bit when the machine is running at full speed will enable the fixer to locate weak needle-bar springs. It is very important that the collars on the needle-bar shaft be set as close as possible to the bearings to prevent the shaft from floating, which will cause lines in the fabric and dropped stitches in the narrowings.

In reference to the needle-bar motion on Reading machines, Textile Machine Works states: "(a) Check all needle bars as to their lateral setting and see that the needles are central with the sinkers and dividers. If the needles are thus out of alignment, a tight selvage will be produced on one side of the fabric and a loose selvage on the opposite side. (b) Check the needle-bar setting as to height by using Gage No. 1126. Bad selvages will result if this setting is either too high or too low. (c) All needles should be carefully oiled daily to prevent corrosion and the consequent possibility of the yarn being caught and stretched."

Maintaining a uniform pressure on the needle-bar rollers as the machine wears requires skill, since the weight of the needle bars lifts the roller off its cam when one or more needle-bar springs are removed. The writer believes that the best method is by holding the needles down to gage height, except for minor adjustments, and then realigning by the method described in the July, 1940, issue of TEXTILE WORLD, each time the needle bars are removed for reneedling.

PRESSER MECHANISM. With careful gaging, modern machines will have a correct in-and-out movement of the needles, and correct amount of press. Perhaps the best test for the presser motion is to check the block-gage distance between the presser-cam circles and the cam rollers when realigning; also, the needle-bar distance from the front bed. Next, a head can usually be found where a needle can be put in on the outside of the end sinker; if not, an outside sinker can be removed to give an unobstructed view of the needle beard. The correct position for almost every type of fabric is to have the point of the needle beard at the same height as the bottom edge of the sinkers when the needle beard comes in contact with the press edge of the sinker bed, as shown in Fig. F4.

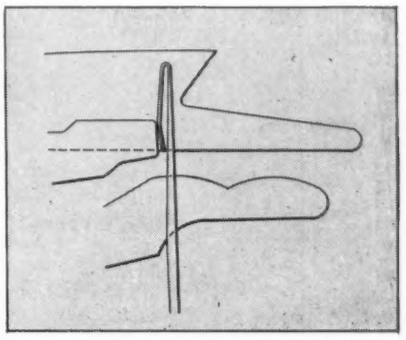


Fig. F4. Correct position of needle beard when it comes in contact with press edge

Presser-cam bits are subject to considerable wear, and they will need to be raised and refinished to their original height and shape when they become worn. In the February, 1934, issue of the *Reading Record* it is stated: "Both sinker and needle lines are the result of inaccurate needle-bar setting, either for the horizontal or the vertical movement. Therefore it is essential to make sure that this part of the machine is adjusted and functioning properly. Such defects are often the result of unequalized presser rollers on the presser cams. Check the setting of these rollers, beginning at the center of the machine and working toward each end. All presser rollers should touch the round part of their respective cams at the same time."

(In the next installment of this chapter Mr. Simond will discuss the stitch regulating mechanism—Editor)

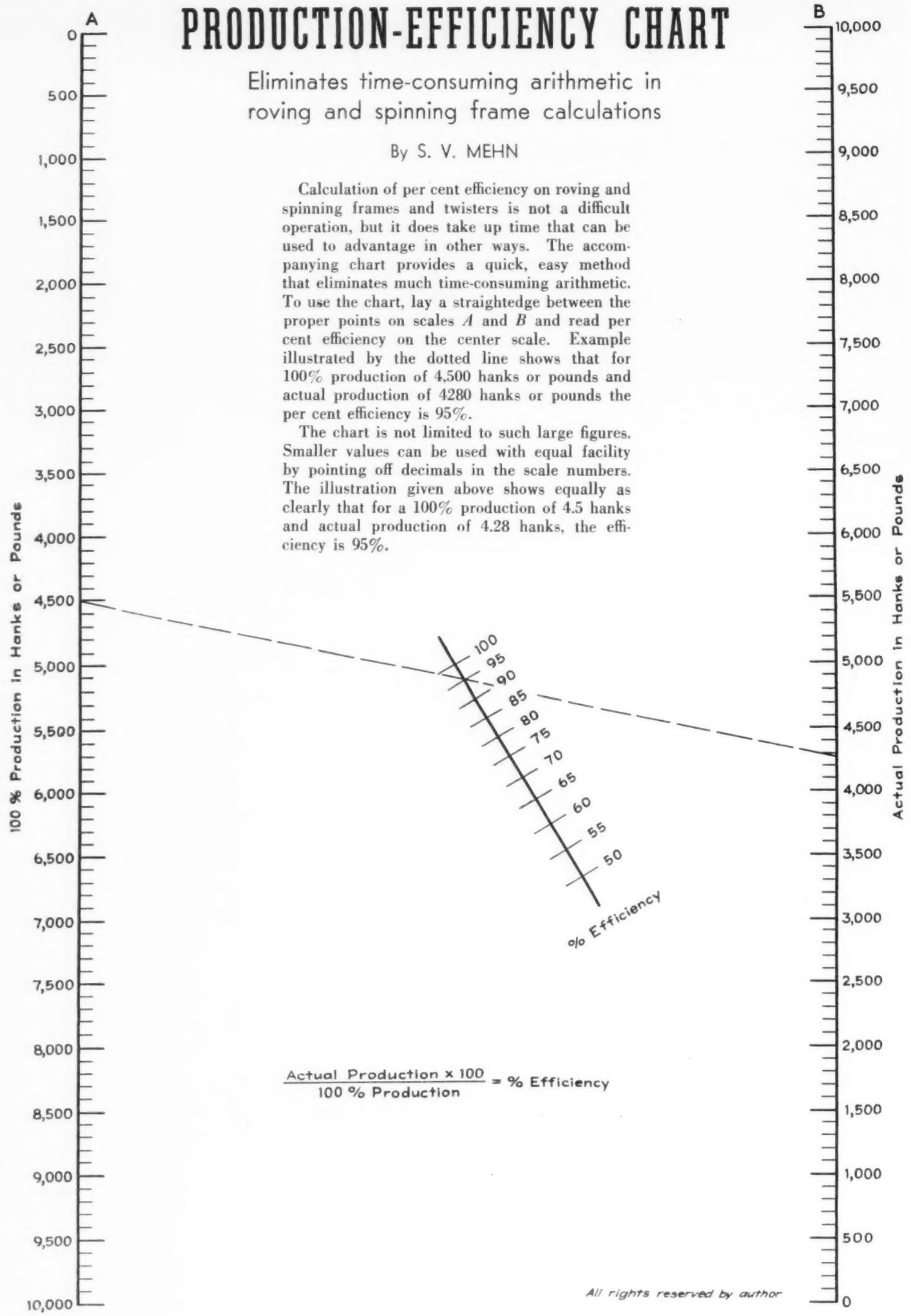
PRODUCTION-EFFICIENCY CHART

Eliminates time-consuming arithmetic in roving and spinning frame calculations

By S. V. MEHN

Calculation of per cent efficiency on roving and spinning frames and twisters is not a difficult operation, but it does take up time that can be used to advantage in other ways. The accompanying chart provides a quick, easy method that eliminates much time-consuming arithmetic. To use the chart, lay a straightedge between the proper points on scales *A* and *B* and read per cent efficiency on the center scale. Example illustrated by the dotted line shows that for 100% production of 4,500 hanks or pounds and actual production of 4280 hanks or pounds the per cent efficiency is 95%.

The chart is not limited to such large figures. Smaller values can be used with equal facility by pointing off decimals in the scale numbers. The illustration given above shows equally as clearly that for a 100% production of 4.5 hanks and actual production of 4.28 hanks, the efficiency is 95%.



$$\frac{\text{Actual Production} \times 100}{\text{100 \% Production}} = \text{\% Efficiency}$$

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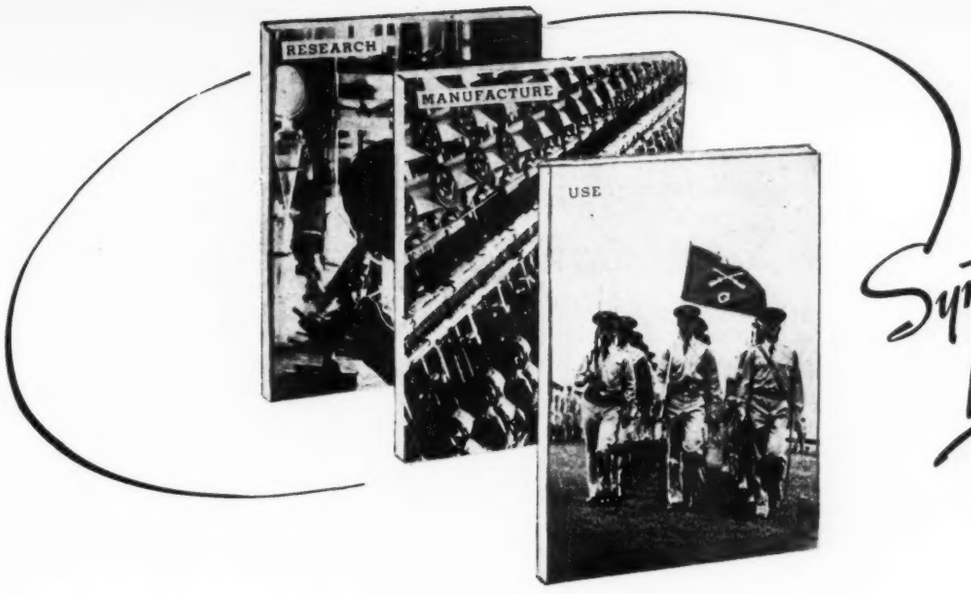


Synthetics in National Defense

Thanks to Rayon

INTRODUCTION BY
DOUGLAS G. WOOLF

ONCE IN THE DIM DARK PAST (1922) we recorded in these columns an annual production in this country of 25,000,000 lb. of rayon.

All the doubters prepared for the bubble-bursting ceremony.

In this issue, in the year 1940—only 18 years later—there is indicated a possible domestic productive capacity of 600,000,000 lb. of rayon, including both filament and staple, some time next year.

The bubble has not burst yet. Nor will it burst.

As we said back there in 1922, so we say again: This is only the beginning. New records lie ahead—and new headaches.

The industry is still a new one: in a state of flux, knowing no set boundary lines. The best demonstration of this is the appearance of a new group of fibers, completely synthetic and produced without benefit of cellulose. They present to the established rayon industry the same type of threat, possibly, and the same type of question-mark, certainly, which rayon has presented to the natural fibers during the last two decades. No synthetic-fiber producer can feel any safer than his research organization permits. He can wake up any morning and find that the chemist and physicist, working in unison, have changed his whole world for him.

Similarly, the spinner and weaver and knitter who utilize rayon have no assurance of safety. Sheet fabrics, completely synthetic, are being produced in increasing quantities—without benefit of spinning frame or loom. Just how far this trend will go is anybody's guess. But if ever a textile manufacturer needed to be on the alert, that time is now.

AND INTO THIS already complex picture comes one more complication: the national defense program. What is that going to do to the synthetic fiber industry? We can be sure of only one thing: it won't let it alone.

Undoubtedly new production records will be set, new uses developed. There is the dual problem of the direct use of synthetics for military purposes, and the indirect use of synthetics as substitutes for civilian purposes, to release needed natural fibers for military use.

This point should be emphasized: The development of the synthetic-fiber industry to its present status of volume and versatility is the best possible assurance of adequate textile materials for defense. The situation is infinitely sounder than it was in 1917, thanks to rayon. Man, not nature, now controls the destiny of a considerable portion of our raw-material supply. It is a heartening thought.

It may seem strange to talk about scarcity when glut has been our problem for so many years. But events move rapidly nowadays—and anything may happen. In fact, it *is* happening.

THE SIXTEENTH ANNUAL RAYON SECTION FOLLOWS ➡

Synthetic Fibers Enlisted

Will assure adequate supply of textiles for both military and civilian purposes

SYNTHETICS IN NATIONAL DEFENSE

The following symposium on Rayon in National Defense is a TEXTILE WORLD staff job and includes contributions from Winn W. Chase, associate editor, Blaine Stubblefield, of our Washington Office, and Paul Wooton, chief Washington correspondent.

INSURING THE UNITED STATES against any possible shortage of textile raw materials essential to the national defense program is the large and growing synthetic fiber industry. Everybody realizes the importance of textiles in this program. Comparatively few people appreciate the part that rayon and other synthetic fibers may play.

The extent to which synthetics will be employed directly for military purposes and for civilian use to release natural fibers for military applications hinges on many contingencies. These include the duration of the emergency, the number of men mobilized, the continued availability of natural fibers normally imported from other countries, and the superiority of synthetic fibers over natural fibers for certain specific purposes. Whatever the eventuality, the Administration is determined that there shall be no lack of essential textile materials. This determination prompted the setting up of the Textile Division of the National Defense Commission. It is significant that one of the members of this Textile Division is an expert in the synthetic fiber industry.

The primary function of the Textile Division is to insure an adequate flow of textile raw materials, including all fibers and semi-manufactured products. Although the Division has made no report as to its activities, it is certain that it has given earnest consideration to the feasibility of substituting synthetic fibers for natural fibers in a variety of textiles used for military purposes if this should prove either necessary or advisable.

It should be emphasized that the Textile Division does not do any purchasing of textiles or developing of specifications for textiles. Army purchases, for example, are made by the Procurement Division of the Treasury Department, through the Quartermaster General, and—for special purpose fabrics—directly by such departments as the Air Corps, Signal Corps, etc. The Textile Division, naturally, is working in close cooperation with those responsible for the actual procurement of textile materials.

Officers in the Quartermaster Corps and certain other departments are keenly aware of the fact that synthetic fibers are likely to play an increasingly important role in manufacture of textiles for military use. Accordingly, tests are being made to determine just where rayon and other synthetics can be employed in place of silk, wool, and other natural fibers.

USE OF RAYON is called for thus far in only a very few of the many specifications which the Army has set up. Further, there is no intention of changing the present specifications unless it proves to be necessary or advantageous. And, with minor exceptions, natural fibers are available in sufficient quantities to permit their continued use, even if our armed forces are increased to 1,000,000 men.

But an entirely different situation will arise if the war continues for several years, spreads to other countries, stops all our imports of silk and wool, compels us to raise and maintain an army of 3,000,000 or 4,000,000 men. Nobody connected with the National Defense Commission or with the Army is willing to state just what steps would be taken in that eventuality. It is evident, however, that plans are being formulated to meet just such an emergency and that synthetic fibers would then assume a position of vital importance in the national defense program, as they already have in Germany and Italy.

First, consider what would happen if our supply of raw silk is suddenly shut off. Silk is on the list of "strategic materials" drawn up by the War Department. The Government undoubtedly has the power to earmark every bale of silk for military uses, and undoubtedly the Government will do this if it becomes necessary. Such a move would insure a supply of silk for parachutes and other military fabrics which would be adequate until a suitable substitute is adopted.

Again, visualize a long war, an army numbered in the millions, a two-ocean navy, no imports of wool. The Army and Navy would demand and would get every pound of wool which could possibly be diverted to them, and still would be unable to get enough. Blends of wool and staple rayon would be adopted for various military fabrics.

At the same time the textile industry would find it necessary to employ increasingly large amounts of synthetic fibers in textiles for civilian purposes. Deprived of silk, the full-fashioned hosiery industry, for example, would make extensive use of continuous-filament rayon. The wool content of suitings, overcoatings, blankets, etc., for civilian use would be cut to a minimum, being replaced to a large extent by rayon staple fiber and other synthetics.

There is not the slightest doubt that the textile industry can meet any and all emergencies. In perfecting its plans to insure an adequate supply of textile materials for military uses, with a minimum of confusion to anyone, the Textile Division is not losing sight of the increasingly vital role which synthetic fibers seem bound to assume in the defense program.

Direct Military Uses

IN PLACE OF THE PAPER TEXTILES to which Germany resorted in the World War, *erzatz* fabrics made from rayon and casein fibers are being utilized by that country and by Italy in carrying on the present conflict. With an ample supply of cotton, wool, and silk to meet all requirements which can now be foreseen, the United States has made little use thus far of synthetic fibers in textiles for military purposes. But all concerned—military authorities, members of the Defense Commission, rayon producers, textile manufacturers—have

a growing conviction that in the future synthetic fibers will be employed in many textiles for direct military use. The question as to how quickly synthetic fibers will be adopted for various purposes by the Army and Navy and how widely they will be utilized cannot be answered categorically. It is possible, however, to indicate some of the places in which they may be used in certain eventualities.

One possibility which is being taken into consideration is that at some time the supply of wool may be inadequate for military purposes. Remote as this contingency appears today, it may occur. Therefore, while the Army has no intention of adopting rayon-wool blends as long as pure-wool fabrics can be obtained, the Quartermaster Corps has ordered, for experimental purposes only, small lots of shirtings and uniform fabrics composed of a blend of 30% viscose rayon staple and 70% wool. Again, textile manufacturers have submitted part-rayon and all-rayon blankets for examination and tests by the Army. A campaign hat composed in part of a synthetic fiber derived from casein is another item which has been offered for consideration. Spun-rayon and wool flannel for hospital use is another possibility.

In studying the problem of emergency substitutes for wool, neither the Army nor the Navy has lost sight of the fact that for some purposes use of cotton is entirely feasible. Rather, in view of its over-abundance and low cost, cotton naturally would be favored wherever it is just as satisfactory as rayon. Likewise, the possibility of using reworked wool in military fabrics in time of need is not being overlooked.

Domestic production of wool suitable for apparel purposes appears to be ample to meet the needs of an armed force of any size yet contemplated, as it could be allocated almost wholly to that use. However, the bare possibility that an emergency may arise which will make it necessary to eke out the supply of wool with substitute fibers has prompted the above-mentioned experiments with staple fiber and wool blends.

The situation with regard to silk is quite different. Although it is used in much smaller quantities than wool, silk is a highly important fiber from the military standpoint. It is regarded as the best fiber now available for making parachute cloth and cartridge bags. It is not produced in this country, and imports may be cut off.

Until recently, efforts to find a really satisfactory substitute for silk for parachutes met with little success. Ordinary rayon, for example, is not so strong; it deteriorates more quickly in the tight pack. Then came Nylon. The Army Air Corps, Navy Bureau of Aeronautics, the producer of Nylon, and weavers of parachute cloth all recognized its possibilities. Specifications for Nylon parachute cloth were drawn up; the cloth was woven in experimental quantities; parachutes were made and tests begun. Conclusive results have not yet been obtained, because time is required to determine how well Nylon will stand up in the tight pack.

It takes 65 to 70 yd. of cloth to make a parachute of average size. Airplane production will quadruple in the coming three or four years; need for parachutes will increase correspondingly. While authorities will not comment, it appears that synthetic fibers have made this country independent of silk for parachutes; and will eventually provide a better fabric than can be made from any natural fiber.

FOR USE IN BIG GUNS, cartridge bags made from spun silk are now preferred. Unburned pieces of the bags blown out of guns do not glow and smolder; lumpy ash left in the gun is easy to remove. Cotton, suitable for small guns, is unsatisfactory for those of large caliber. Viscose rayon bags are likely to leak; give a troublesome, dusty ash. Acetate rayon is better, but not so good as silk. Recent bids called for over 200,000 yd. of silk fabric for cartridge bags. Large expenditure of heavy ammunition in Navy and Coast Defense guns would boost the need. With no entirely satisfactory substitute for spun silk available, government experts and synthetic fiber producers saw the need of creating one. All that can be said now is that the Army and Navy have knowledge of a suitable substitute.

By joint action of the War and Navy Departments, one grade of mercerized cotton fabric has been standardized on for airplane cloth. Despite the fact that the trend is toward metal planes, considerable quantities of fabric are required for covering ailerons, rudders, etc. Because it does not support combustion, and because it fuses at a comparatively low temperature, Vinyon offers interesting possibilities for use in airplane cloth. These possibilities are being thoroughly investigated, not because of any shortage of cotton, but to determine whether or not a definitely superior fabric can be made from synthetic fibers—one which when pierced by a hot bullet, will fuse at the edges of the hole and not tear further under strong wind pressure.

Linen has some comparatively small, but important military uses; and, with imports of flax stopped, a shortage already has occurred. For some purposes, long-staple cotton is a satisfactory substitute; for others, high-strength continuous-filament viscose or acetate rayon appears to be more suitable. In England, where there is also a shortage of linen, experimental fabrics for gun covers and similar applications, have been produced from high-strength rayon

Composite photo suggests use of Nylon, staple fiber, casein fiber, high-strength rayon in parachutes, overcoats, hats, tire cords

yarns. Another potential use for high-strength rayon is as a substitute for manila fiber and other cordage fibers in the event that imports of these are stopped. One further application of high-strength rayon which the Army is investigating is that of cords for tires on high-speed trucks, staff cars, etc.

The list of military textiles now made of viscose or acetate rayon is small; hat cords, chevrons, and padding contain rayon, and there is some talk of making flags from it. Thus far the most important item by volume apparently is rayon lining for coats for flying cadets. Rayon linings are also used in CCC blouses and overcoats, but have not yet been approved for the Army.

In addition to woven fabrics, there have been submitted to the War Department a variety of articles made from synthetics produced in the form of films or sheets. One of these is thin, light, transparent raincoat. Others include straps, belts, harness—even shoes. None of these actually has been adopted; but each is being investigated and subjected to tests. Some of the materials, for example, are impervious to gas, making them of particular interest to the Chemical Warfare Service.

Glass fibers have some properties not possessed by any other fiber—synthetic or natural; and an educational contract has already been placed for Fiberglas products.

From this summary it is evident that in the future synthetics are destined to find more and more use in military fabrics. Just how important they will become and how quickly they will be adopted depend, first, on the continued availability of natural fibers in quantities to meet all military requirements, and, second, on the speed at which synthetic fibers are introduced which are better or cheaper than the materials now employed. Military authorities are keeping themselves informed of all developments in the synthetic fiber field and are preparing to use synthetics whenever it proves necessary or advantageous to do so.

U. S. Signal Corps Photo

Vinyon offers possibilities for use in airplane fabrics

For Civilian Purposes

THERE IS A DISTINCT POSSIBILITY that before the present emergency is over, synthetic fibers will have replaced in large part some of the natural fibers now employed in fabrics for civilian purposes. There is a virtual certainty that in the very near future there will be a more-than-normal increase in such use of synthetics. Already there is a greater demand for natural fibers for production of military textiles than ever before when this country has been at peace. Already imports of some fibers, yarns, and fabrics have been reduced or stopped. Any further increase in the size of our armed forces than is now planned or any further reduction than has now occurred in imports of natural fibers will make the textile raw material problem just that much more acute.

The need for conserving our supply of wool for use in military fabrics is apparent. Domestic production of apparel wool is inadequate to meet all needs under normal conditions, and was supplemented in 1939 by imports of some 65,000,000 lb. of apparel wool, in form of raw stock, yarn, and fabrics. Realizing that soldiers in the field wear out clothing much more quickly than do people in civilian life, and that serious difficulties may be experienced in securing foreign wool, one can readily see that the supply of apparel wool will have to be eked out by other fibers. It is a foregone conclusion that to a large degree this will be accomplished by the more extensive use of rayon-staple fiber in suitings, overcoatings, dress goods, and other apparel fabrics. In addition, synthetic fibers derived from casein, soy beans, and other proteins probably will be used.

All our carpet wool is imported—103,000,000 lb. in 1939. When and if imports are reduced or stopped, carpet and rug manufacturers will have to find substitutes, and they will turn naturally to rayon staple and the other synthetics which they are now using in limited quantities. Likewise, synthetics will be employed more widely in upholstery materials—cut staple and flock for pile fabrics; Saran and other synthetics in continuous-filament form for flat fabrics.

Felts now produced from wool may give way to those made by combining under heat and pressure thermoplastic fibers, such as Vinyon and cellulose acetate, with cotton or even viscose rayon. Increased use will be made of Fiberglas, Vinyon, and other synthetic fibers in production of filter cloths.

SILK CONSUMPTION last year totaled 55,000,000 lb. Any great increase in demand for parachute fabrics and cartridge cloth will necessitate more extensive use of rayon and other synthetics in manufacture of hosiery, women's underwear, and other civilian uses. If imports actually were stopped,

synthetics would in all probability entirely supplant silk for all time. Knitters could change overnight to Nylon and Vinyon and to continuous-filament rayon—preferably high-strength rayon. The comparatively small quantities of silk piece goods now made would be replaced by rayon fabrics and by fabric-like materials produced in sheet form from synthetic resins and synthetic rubber for shower curtains, raincoats, umbrellas, hospital use, etc.

Silk thread used for electrical insulation purposes would be replaced by acetate rayon, Fiberglas, and other synthetics.

Imports of flax and linen have already stopped. Substitutes will be needed immediately to take the place of linen handkerchiefs, towels, dish towels, table cloths, napkins, draperies, sewing thread, fish lines, and other products. Among the synthetics which are suitable for making various of these items are continuous-filament and spun-rayon yarns, Fiberglas, and Permalon.

THE ENTIRE WORLD SUPPLY of high-grade manila fiber—of which the United States takes over 90,000,000 lb. annually—is produced in the Philippines. There is no known satisfactory substitute for manila fiber in making the quality of rope essential for marine cordage, oil-well cables, and construction work. If imports are cut off, substitutes must be found; despite the high cost, it might be necessary to use high-strength rayon or some other synthetic fiber.

Although in general the domestic supply of cotton appears to be ample to supply all military and civilian requirements, there is a decided scarcity of the longer staples. Moreover, importations of Egyptian cotton have been stopped. Wherever it is feasible to substitute cotton of shorter staple, this naturally will be done. Where short-staple cotton is not suitable, high-strength rayon in continuous-filament or cut-staple form undoubtedly will be employed. Present applications for high-strength rayon which probably will become more important include the manufacture of tire cords, belting, sail cloth, filter fabrics, covering for rubber yarns, shirtings, and half hose. Presumably, various other uses will be discovered as the shortage of long-staple cotton becomes more critical.

As yet there are too many unknown factors to permit even a rough estimate of the amount of rayon and other synthetic fibers which it will be necessary to employ in fabrics for civilian use in order to release essential natural fibers for military purposes and to take the place of raw materials which are normally imported into this country. There is a strong probability, however, that the textile industry will require every pound of synthetic fiber which can be produced next year. For this country to attain self-sufficiency, still larger amounts will be needed in future years. Those who have studied the problem of synthetic fibers as related to the national defense program are in agreement that the first and biggest use as substitutes for natural fibers will be in civilian fabrics. It is highly important, therefore, for textile manufacturers to learn as quickly as possible how to utilize the various types of synthetic fibers to best advantage in the broadening range of products where their use is now advantageous and may ultimately be mandatory.

Use of spun rayon in fabrics for civilian purposes will increase

Raw Materials for Rayon

RAYON PRODUCTION in 1939 reached the record-breaking figure of 384,000,000 lb. In 1941 the estimated plant capacity of 600,000,000 lb. may be taxed to its limit, and producers of other synthetic fibers, such as Nylon and Vinyon, may be called upon to speed up output. Further, some of the raw materials employed in the production of synthetic fibers are used also in manufacture of other products essential to the defense program. The question as to whether or not there is an ample supply of all raw materials is, therefore, of vital importance to both the rayon producers and to textile manufacturers.

As regards the basic cellulosic raw materials, it is estimated that maximum requirement next year for wood pulp is in the neighborhood of 500,000,000 lb.; for cotton linters, somewhat less than 150,000,000 lb. In a recent report to the President on the pulp and paper situation, Leon Henderson, who is in charge of the Price Stabilization Section of the National Defense Commission, stated: "There is no actual shortage of wood pulp with the minor exception of special grades. There is no immediate danger of such a shortage developing, as additional capacity can be made available. . . ."

This statement made by Mr. Henderson and the fact that leaders in the pulp and paper industry are in agreement with it indicate clearly that there is no fear of a shortage of wood pulp or of radical price increases.

Cotton linters are employed by the rayon industry chiefly in production of acetate rayon and some of the special high-strength rayons. A more important use from the standpoint of national defense is in the manufacture of explosives of the nitrocellulose type. It is probable that a satisfactory acetate rayon could be produced from alpha cellulose derived from wood pulp if that became necessary. It appears, however, that there is an ample supply of cotton linters to meet any emergency which can be foreseen at present, particularly if some of the linters now used in manufacture of mattresses were diverted to the production of so-called "chemical cotton."

What has been said of wood pulp and cotton linters holds true for the other raw materials employed in production of synthetic fibers. That is, adequate supplies of the various chemicals required are available or can be readily made available to meet the needs of the rayon industry. On the other hand, priority schedules are being worked out for each major commodity which appears at all likely to be subject to supply difficulties; and these priorities can be imposed if necessary. Hence, with the growing importance of synthetic fibers in the defense program, there is every reason to believe that producers of these fibers can be assured of a continuous and adequate flow of raw materials. This, in turn, means that the textile industry will be able to obtain rayon and other synthetics in amounts limited only by the capacity of the producing plants.

Rayon Plant Capacity, and Outlook

The present situation and some factors bearing on the future plant expansion

SYNTHETICS IN NATIONAL DEFENSE

By STANLEY B. HUNT
Textile Economics Bureau, Inc.

WHEN DISCUSSING the capacity of the filament rayon industry,* a careful distinction must be made between *installed* capacity and *operating* capacity. *Installed* capacity refers to the rated capacity of the industry producing yarn at assumed, fixed deniers. In the case of the viscose and cuprammonium rayon, this basic yarn size is taken as 150 denier, while the acetate standard is 120 denier.

Operating capacity, on the other hand, is the actual producing capacity of the industry based on yarn deniers being spun at the time a capacity survey may be taken. Within limits, the operating capacity of the industry is directly proportional to the average yarn denier being spun. For example, if the viscose process division was actually spinning yarn at an average of 135 denier, then its operating capacity would be about 90% (135 divided by 150) of its rated installed capacity.

As of mid-year 1940, the industry's *installed* capacity for filament yarn production is estimated at 440,000,000 lb. on an annual basis, while its *operating* capacity is rated at slightly over 390,000,000 lb. Of this latter capacity, about one-third is acetate process and the remaining two-thirds is viscose plus cuprammonium process capacity.

Based on currently-known plans, the industry's filament yarn *installed* capacity by mid-1941 should approximate 475,000,000 lb. on an annual basis, or an increase of 8%. At present deniers spun, this capacity on an *operating* basis would approach 425,000,000 lb. annually, or 35,000,000 monthly.

The mid-1940 installed and operating capacity of the rayon staple fiber industry is rated at nearly 100,000,000 lb. on an annual basis. This figure includes all of the viscose and cuprammonium staple fiber producing capacity, but only includes that part of the acetate staple fiber capacity as is specifically designed for that purpose. Future capacity expansion plans have not been announced by the several staple fiber producers. But well defined expansion plans are under way and a reasonable estimate of capacity one year hence might be say 25% above the present figure.

THE BASIC CAPACITY of the rayon industry is influenced by several factors. One of these, as noted, is the denier of yarn spun. There has been a tendency in recent years for the industry to spin yarn of a finer average denier and this in turn reduces the operating capacity of the industry. Specifically, the average denier of yarn spun has dropped about 10% over the last three years.

The speed at which the machinery is run also is a factor determining capacity: the faster the spinning the greater the yardage spun, of course. But it is probably fair to say that the existing producing machinery is now being run at speeds which represent the optimum speed between greater production on the one hand and a lowered quality of product on the other hand.

The rayon producing industry typically runs on a 24-hour basis in the chemical and yarn spinning areas. Therefore, the potential output of these rayon plants is already stated at a maximum figure. On the other hand, the textile departments of rayon plants usually work on a one- or two-shift basis. From this, it will be seen that the matter of increasing rayon industry production is not at all analogous to that of an industry which normally operates only on a single shift basis.

There are several possible bottlenecks in a given rayon plant. For example, the viscose-making capacity of the plant may be too small for the producing machinery itself. But generally speaking, this item is no longer a factor because of the shift to finer deniers now being spun, as noted. Another possible bottle-neck would be in the textile area, particularly if the wanted type of yarn package should change; but most of these textile departments in rayon plants are on one or two shifts, and such departments thus could be run on longer shifts if occasion should warrant.

The possibility of interchangeability of equipment in the rayon industry essentially does not exist. For example, it is not possible to spin acetate rayon on viscose rayon spinning equipment and vice versa. Nor is it economically feasible to spin viscose rayon staple fiber on viscose filament yarn machinery. In fact, the only interchangeabilities in the industry, of which the writer is aware, are: (a) Vinyon can be spun on acetate process spinning machinery; and (b) the same spinning machine may be used to spin either acetate staple fiber or acetate filament yarn.

Further, it is impossible to convert machinery from other industries for use in the rayon industry. Rayon machinery is specifically designed for producing rayon and for that purpose only. In this sense, rayon-producing machinery is very different from a machine lathe, for example, which has many applications in the machine tool industry.

Up to this point, discussion has centered around the quantitative approach to rayon installed capacity. From the qualitative angle, the industry's capacity has been well maintained and improved. Most rayon-producing companies have had a very good machinery maintenance and replacement program over a long period of years. As machinery has worn out, or as greatly improved machinery has come on the market, the old machinery has been repaired or replaced. Further, new and improved methods of spinning technology have been rapidly accepted by the industry. This whole program has meant not only that every effort has been made to keep costs in line with modern practice, but also it has meant that the quality of the rayon produced has been constantly improved over a period of years.

ANOTHER IMPORTANT FACTOR in rayon production and capacity is the labor supply. Inasmuch as the industry is already operating at its peak capacity,

* This article is confined strictly to the rayon industry itself, including rayon made by the viscose, cuprammonium and acetate processes. A discussion of the capacity of Nylon, Vinyon and other synthetic fibers not derived from cellulose, is not included here.—*Author.*

it may be properly assumed that the industry has an adequate labor supply. Further, it is possible to train workers in the rayon producing industry in a reasonably short period of time. Thus it may be concluded that the labor supply should not prove a limiting factor in rayon production and capacity.

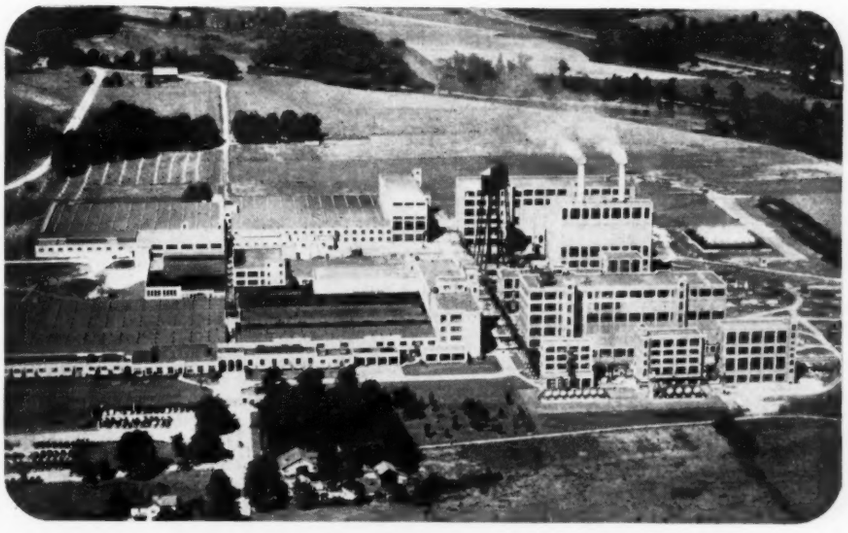
IN CONSIDERING whether or not to expand his capacity, the individual rayon producer is faced with a number of problems and factors. One of the most important of these, as already noted, is the fact that a rayon plant can be used only for the production of rayon; that is to say, there exists no possibility of interchangeability as between rayon and some other potential product once the rayon plant is built.

A second important consideration is the high initial plant investment. The cost of building a new rayon plant may vary widely, depending on the type of rayon made, the type of machinery used, the location, and several other factors. But certainly it is fair to say that the cost of a new fully-equipped filament rayon plant today is in the range between 75¢ and $1.00 per annual pound of productive capacity. Because of this high initial cost, it follows that plant depreciation is an important cost factor in the eventual yarn produced. Particularly does the depreciation, a constant annual charge, become a heavy charge when it must be written off against production at below-capacity rates of operation. Further, the above figures do not include the working capital required to operate the plant once it is built.

Another consideration is that of technological change. A plant built using modern technology may be far behind the current technology five years hence. This means that, in addition to the high initial plant outlay, proper allowance must be made for new developments in technique. This point refers to obsolescence costs as contrasted with depreciation-maintenance charges.

A further factor is the long time required to design and build a new rayon plant. From the time that construction of a plant is actually started until the time that satisfactory yarn is obtained is invariably over one year. And if we add to this normal situation another special situation such as the present one in which it is very difficult to get new machines and equipment built and delivered, the time required for constructing a new rayon plant could easily stretch to an additional six months or one year. During this building period, large amounts of capital are unproductive, of course. Thus the time factor is a very important one.

An additional consideration would be whether to expand a present plant, or build a new plant at a different location. Often present plant facilities can be expanded at a cheaper cost per pound than the per-pound cost required to build a new plant. The reason for this is that some part or parts of the present plant may be larger than are now needed for existing production. For example, the power plant might be able to produce say 50% more power than it is now delivering; or the floor area might be easily expanded at a nominal cost. If such conditions obtain, then the cost of installing an increment capacity on an existing plant may be well below the corresponding costs of building a new plant.



One of the new units recently added to the industry—Acetate rayon plant of American Viscose Corp., Meadville, Pa.

If one could assume an unlimited demand for rayon yarn as well as fixed production costs (highly questionable assumptions to say the least), still another consideration would be the selling price of the rayon yarn. There is obviously a difference to the prospective rayon plant builder as to whether rayon prices stay at today's level, whether they increase above today's level, or whether they decline below the present figure. Yet these are variables which must be carefully assessed.

AT THE PRESENT TIME, probably three quarters of the rayon filament yarn sold is used for women's apparel purposes, the remainder being about equally divided among men's apparel uses, household uses, and industrial and miscellaneous uses. An appraisal would have to be made as to whether more rayon could go into these several uses and, if so, to what extent. The effect of the recently-announced new Sanforset process for eliminating shrinkage in rayon fabrics would be a factor here, for example.

As regards the substitution of rayon for other fibers, it has been demonstrated that, with certain limitations, rayon staple fiber can be satisfactorily used in place of wool and flax particularly. On the other hand, the rayon filament yarn has essentially displaced silk in all of its uses except women's full-fashioned hosiery.

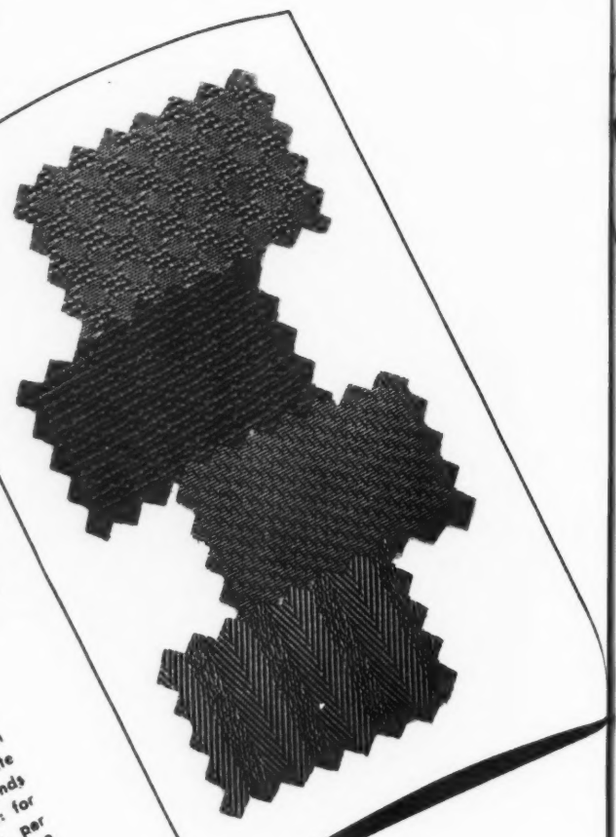
Rayon filament yarn having been used chiefly for apparel purposes up to this time, its demand has been affected directly by the state of general business; that is to say, as general business becomes more active, the demand for rayon goods also becomes more active and vice versa. We might call this factor the cyclical demand for rayon. Another factor in rayon growth has been its long-term, or secular, growth. Thus as the price of rayon has been decreased, and as its quality and style have been improved, the demand for rayon has increased. These factors are of the utmost importance.

An effort has been made to keep this article on a factual basis. It is believed that any quantitative forecast of future rayon plant capacity would probably be wrong and would be gratuitous to say the least. Yet it must be recalled that shipments of all types of rayon in 1939 comprised only 10% of the total consumption of new fibers by the textile industry that year. Thus it is easy to forecast that rayon plant capacity will increase in this country. The quantitative effect of the defense program, both in direct military use and in replacement in civilian use, is another unpredictable factor, but definitely a bullish one.

The Fabric Forecast

Rayons for Spring 1941: authoritative data from group of recognized experts

RAYON WEAVERS close to the New York market, who can easily visit fabric development departments of big yarn producers, have had a decided edge in knowing what was ahead for the next season. We asked producers to make this information available to mill men everywhere, through the medium of TEXTILE WORLD. They agreed. The result is the accompanying article. It is full of first-hand, exclusive information, obtained from such experts as Pierre Sillan, American Viscose Corp.; Charles A. Lasky, Celanese Corp. of America; Alexis Sommaripa and Carl Taber, E. I. du Pont de Nemours & Co.; and Carl C. Mattmann and Thomas Pennington, A. M. Tenney Associates, Inc. Fabric development men of other rayon producers will be invited to express their views in future articles.



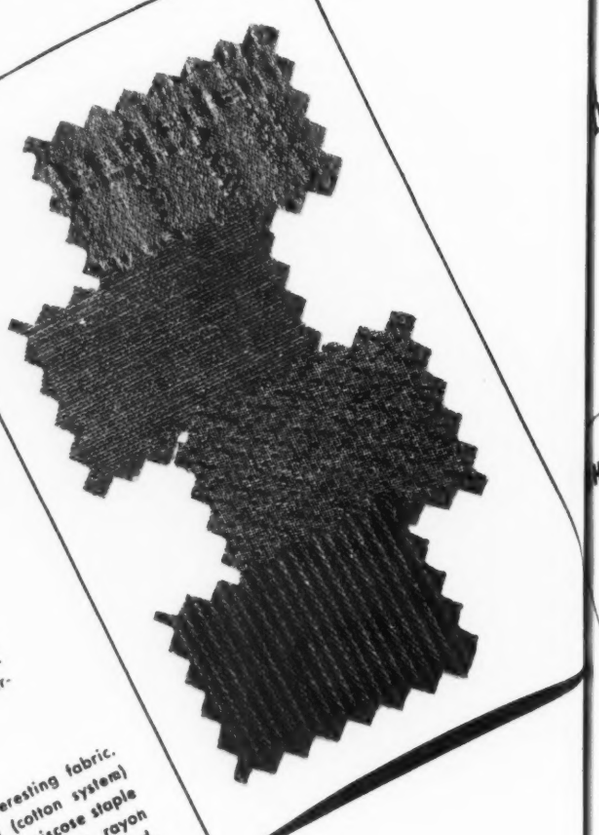
SHARKSKINS

Warp and filling 200-den. dull acetate rayon, 3 turns per in. 82x64, 42 in. in loom.

Warp and filling 600-den., 160-fil., dull acetate rayon, 3 t.p.i. 48x42.

Warp 150-den., 60-fil., dull acetate rayon, 3 t.p.i. Filling 300-den., 100-fil., dull acetate rayon, 3 t.p.i. 120x56.

Warp yarn No. 1: 200-den., 60-fil., dull acetate rayon, 2½ t.p.i. Warp yarn No. 2: 300-den., 92-fil., dull acetate rayon, 4 t.p.i. Warp arranged 40 ends No. 1, 1⁄2 ends No. 2. Two reeds: for warp No. 1 30 dents, 5 ends per dent; for warp No. 2 30 dents, 3 ends per dent. Filling same as warp No. 1. 64 picks per in. 41½ in. in reed.



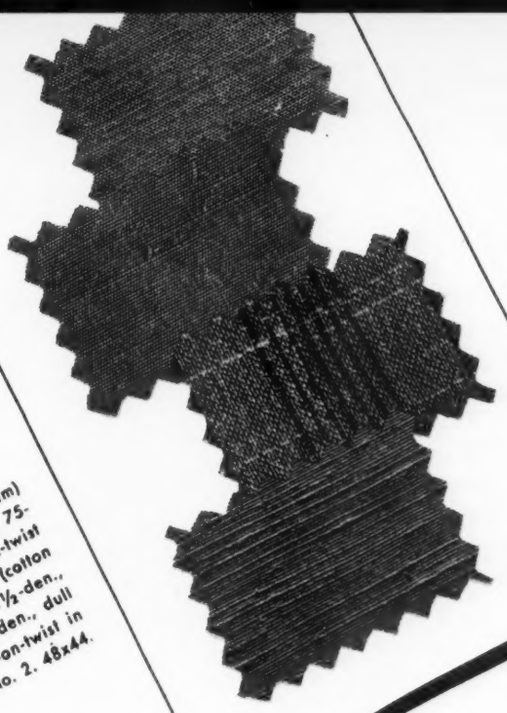
SHEERS

Warp and filling 150-den., 60-fil., thick-and-thin, dull viscose rayon, 48/50 t.p.i. Warp 1S, 1Z; filling 2S, 2Z. 76x62. 47 in. in reed. Plain weave.

Warp and filling 20/1 (silk system) blend of 50% acetate rayon staple and 50% tussah silk, 32 turns per in. Warp 1S, 1Z; filling 2S, 2Z. 56x44. 44 in. in reed. Crisp hand.

Warp and filling 75-den., 20-fil., dull acetate rayon, 5 t.p.i.; and 75-den., 30-fil. rayon crepe, 60 t.p.i.; 15 t.p.i. in combination. Warp and filling arranged 2S, 2Z. 60x60.

Not a sheer, but an interesting fabric. Warp and filling 20/1 (cotton system) blend of 70% 3-den., dull viscose staple and 30% 5-den., dull acetate rayon staple, 18 t.p.i. 72x60. 43 in. in reed.



POPLINS AND SHANTUNGS

Warp 200-den., dull acetate rayon, 3 t.p.i. Filling 30/1 (cotton system) 3-den., 2-in., dull acetate rayon staple, 22 t.p.i. 84x60. 40½ in. in reed. Crisp hand.

Warp 150-den., 60-fil., dull acetate rayon, 3 t.p.i. Filling 20/1 (cotton system) blend of 70% 3-den. viscose staple and 30% 5-den. acetate rayon staple, 24 t.p.i. Z twist. 120x56. 41 in. in reed.

Warp yarn No. 1: 22/1 (cotton system) 1½ den. bright viscose staple and 75-den. dull rayon; 14 t.p.i. twist-on-twist in ply. Warp yarn No. 2: 22/1 (cotton system) flake yarn containing 1½-den., bright viscose staple and 75-den., dull acetate rayon; 14 t.p.i. twist-on-twist in ply. Filling same as warp No. 2. 48x44. 43.5 in. in reed.

Warp 100-den. pigment rayon. Filling spun-rayon and continuous-filament thick-and-thin rayon. 92x52. Plain weave.

ROUGH SURFACES, a crisp hand, and wrinkle resistance characterize many of the new fabrics. Slubs, nubs, flakes and thick-and-thin yarns are used. Blends are plentiful—viscose and acetate staple in various deniers and lengths, bright and dull, crimped and uncrimped, regular and extra strength; and tussah silk, wool, and cotton. Combination yarns help give crispness and resiliency. Weaves are small, often plain. Sharkskins have small fancies, chevrons, diagonals and herringbones.

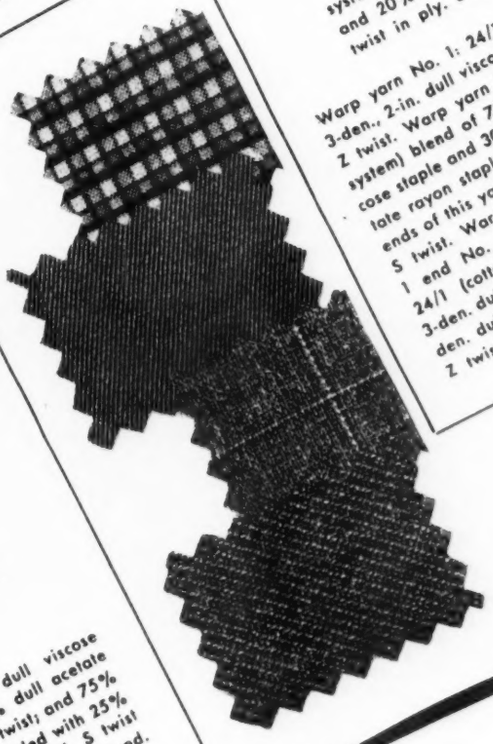
LINEN TYPES

Warp and filling bright spun-rayon slub yarn, 7,800 to 7,900 yd. per lb. 28x30. 44 in. in reed.

Warp and filling 45/1 cotton plied with thick-and-thin filament rayon. 56x 52 (approx.) Crisp hand.

Warp and filling 200-den., 75-fil., thick-and-thin rayon; and 24/1 (cotton system) blend of 80% viscose- staple and 20% silk crepe; 10 t.p.i. twist-on-twist in ply. 36x38. 43 in. in reed.

Warp yarn No. 1: 24/1 (cotton system) 3-den., 2-in. dull viscose staple, 24 t.p.i. Z twist. Warp yarn No. 2: 16/1 (cotton system) blend of 70% 3-den., dull viscose staple and 30% 5½-den., dull acetate rayon staple, 22 t.p.i. S twist; two ends of this yarn combined with 8 t.p.i. S twist. Warp arranged 1 end No. 1, 1 end No. 2, on two beams. Filling 24/1 (cotton system) blend of 70% 3-den. dull viscose staple and 30% 5½-den. dull acetate rayon staple, 24 t.p.i. Z twist.



SHIRTING & WOOLY TYPES

Warp and filling 70/2 (cotton system) 1¼-den., bright, strong rayon staple, yarn dyed; 76x72. 43 in. in reed.

Warp and filling 40/2 blend of 70% acetate rayon staple and 30% viscose staple. 96x50.

Body warp and filling 24/2 (cotton system) blend of 70% 3-den. viscose staple and 30% 5-den. acetate rayon staple. Decorations: 24/2 viscose staple, and 12/1 acetate rayon staple. 44x40. 43½ in. in reed. Crisp hand.

Warp and filling 75% dull viscose staple blended with 25% dull acetate rayon staple, 17 t.p.i. Z twist; and 75% bright viscose staple blended with 25% wool, 17 t.p.i. Z twist; 13 t.p.i. S twist in ply. 38x40. 43 in. in reed. Soft hand.

Handling Rayon in the Mill

Newest methods of making blended yarns, throwing, knitting, and finishing

SYNTHETICS IN NATIONAL DEFENSE

WITH THE CONTINUED EXPANSION of the rayon industry, development of Nylon and other new synthetic fibers, and increasing use of synthetics in manufacture of fabrics both for military and civilian purposes, more textile mills than ever before are seeking information on methods of handling continuous-filament yarn and staple fiber. Keenly aware of the fact that it may prove necessary or advantageous to substitute synthetic fibers for natural fibers in fabrics which are essential to the national defense program, many textile manufacturers are accumulating all possible data which will aid them in doing this quickly and efficiently. A subject of particular interest and importance at present is that of rayon blends for use in uniform cloths, suitings, dress goods, and other fabrics. Accordingly, the first and longest of the following group of practical mill articles is one describing the special methods and settings necessary in making rayon staple blends on cotton equipment. Other equally authoritative and up-to-date articles discuss modern trends in throwing rayon and Nylon, precautions necessary in knitting rayon underwear fabrics, and latest methods for finishing rayon fabrics.

Blends on Cotton Equipment

By H. A. FRANKLIN

THE RANGE OF BLENDS of rayon staple is widening daily as the demand for spun-rayon fabrics increases. Probably the most popular blends are still composed of different deniers and lusters of viscose, viscose and acetate, pure acetate, and nub, seed or flake mixes. Use of wool blended with rayon staple is increasing rapidly. Some silk noils and cotton are used.

The majority of staple used today is 1⅜ in., 1½ to 3 den. Wool of 64s quality is generally used, as its fineness is about the equivalent of 5½ den. rayon staple. Often wool in sliver form is received by the mill and cut into desired staple lengths. Nubs, flakes, or seeds are garnetted from rayon waste and used in the ratio of 25 or 30% in filling and 10 to 15% in a two-way (warp and filling) nub yarn. Silk noils are made from waste silk, such as the ends from cocoons and worn-out silk stockings. The terms "nubs, flakes, seeds" are here used interchangeably, as the meanings seem to vary in different mills.

Undoubtedly more 100% viscose staple, 1½ den. 1⅜ in., is spun today than is any single blend. However, a few typical blends which have proved popular in the markets are as follows: (1) 75% 1½ den. viscose and 25% 3 den. viscose, both 1⅜ in.; (2) 80% 3 den. viscose (dull) and 20% 3 den. acetate, both 1⅜ in.; (3) 75% 1½ den. viscose, 1⅜ in., and 25% seed or nubs; (4) 70% 1¼ den. and 30% 3 den. bright acetate, both 1⅞ in.; (5) 42½% 1½ den. viscose and 42½% 3 den. viscose, both 1⅜ in., plus 15% silk noils; (6) 85% 5½ den. viscose, 1⅜ in., 15% top wool cut to 1⅜ in.

Rayon staple fiber made by different producers has different manufacturing and dyeing qualities, even though the denier and staple are the same. Also, a new run of rayon by the same manufacturer may vary from the old run. Consequently, it is extremely important to keep lots separate at all times, and to run an old lot out of the system completely before entering a new one. Bins for mixing or storing should be covered (if they do not reach the roof) and fitted with a door to keep all fly inside.

There are two general methods of blending or mixing—by hand and by machine. If manual blending is employed, the mix should be weighed carefully in 100-lb. lots and spread in layers on the floor of the inclosed mixing bin. Often twenty or more layers are stacked in a single bin. The stack is cut through by hand from top to bottom and taken to the picker.

Machine opening, considered more thorough than manual mixing, is accomplished with the use of a breaker picker hopper. The fiber is placed in the hopper or on a fine-pin apron; a fan pulls it from the hopper apron into covered bins. Rayon is discharged into the center of each bin by a pipe at the top and is spread evenly over the floor. There it is conditioned as long as local conditions require—usually 24 hr.

TINTING is normally done as far back as is convenient in order to preclude mixing of the fibers in early stages of blending. Color is sometimes applied at the top of the breaker picker by blowing the tint into the fiber in front of the apron with a device resembling a humidifier head. A second system consists of a small pipe which discharges the tint solution into the stock just after the beater contacts the fiber at the feed rollers.

Getting the blended fiber into lap form on the finisher picker is sometimes difficult. If a mix containing nubs or seed is being run, the grid bars must be covered with a sheet of zinc or tin to keep the stock from falling through. As this practice cuts off the air from the stock, an opening must be provided by cutting a 1-in. slot across the pan just in front of the sand bars. Air then tends to fluff the stock as the beater delivers it to the screens, where it forms a compact sheet. It is necessary to install a good lap-splitting device in front of the last screen and behind the calendar rolls. Staple coarser than 3 den. must be held together by adding weight to the arms pressing down on the stock. Sometimes strands of roving run in on each side of the sheet at the calendar rolls will prevent splitting. Lap rolls may be tapered slightly or covered with cardboard tube to insure their free removal from laps. Finer stock than 1½ den. occasionally contains solid pieces of cellulose from spinnerets, little balls or beads from cutting and opening the staple, matted fibers, etc., which are crushed to a powder by the heavy

calender rolls if the weight on these rolls is not reduced. These crushed or mashed particles form "buttonholes." Another cause of trouble is the use of thin oil which may drip on the stock from beater bearings and like places.

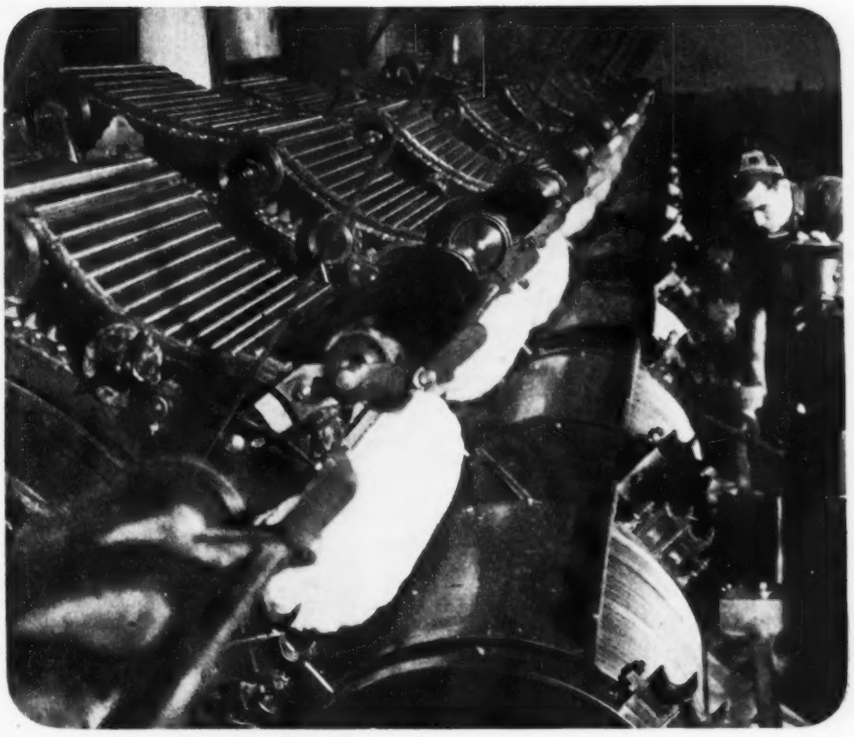
Since rayon staple does not have to be cleaned, two beaters are ample. Best results seem to come from a Buckley and a Kirschner beater, though there are some who object to Buckleys. Blade beaters tend to curl and injure the stock. Beaters are set ¼ in. from the feed roll and operate at 600 to 1,000 r.p.m., usually nearer the lower limit.

If eveners are in good condition, there should be no trouble in getting the lap weight desired. However, many mill men feel that it is advisable occasionally to allow a latitude of as much as 1½ lb. either way, rather than run the lap back through the machine and risk injuring the fibers. Normal variation should be ½ to ¾ lb.

Pickers handling acetate should be curtained off in order to keep fly out of other work. Many mills treat acetate staple with 0.2 or 0.3% mineral oil on the breaker picker in order to keep down fly, particularly at the cards where much static electricity is generated. Viscose fibers do not seem to give much trouble from static. Too much oil, however, causes bad work. About 60% humidity in the picker room helps keep down static and makes the work run better.

It is difficult to card fiber longer than 2½ in. on cotton cards. In starting a card on staple fiber, all previous stock should be carefully stripped and the card cleaned, with particular attention to the sides and bottom. Wires should be ground sharp and kept sharp.

The lickerin screen is covered with a tin or zinc plate and is set with its top against the feed plate to prevent seeds or nubs from being taken out. Feed plate is set 0.017 in. from the lickerin. Lickerin is set 0.007 in. from the cylinder. Back plate of the card should be no closer than 0.034 in. In running a mixture of seeds or nubs, flats should be away from the cylinder at least ⅛ in. to prevent tearing up the particles. Since no cleaning is necessary, stock should remain on top and out of the cylinder wire before it contacts the flats. The stripping plate is set as close to the cylinder as it will run so as to take out as little flat topping as possible. If the front stripping plate has a slot for vacuum stripping, there is a tendency for the plate to warp both above and below the slot. The problem can usually be handled by putting paper under the plate to hold it away from the cylinder. Draft on a card on rayon staple is 110 to 120.



Rayon staple requires greater tension between doffer and calender rolls

Bottom screens under the cylinder should be set as follows: front of screen under doffer end ¼ in., bottom middle of cylinder 0.068 in., back of screen just under lickerin 0.017 in. If these settings are employed, the card will not tend to blow the stock out of the sides. When the bottom screens are not together at the center, the short fibers will be blown out and pile up on the floor until they touch the screen. Often, a draft from the cylinder will suck these short fibers back into the cylinder, where they cause lumps in the work. These lumps can be seen in roving or yarn, and have the appearance of clearer waste, except that there are too many short fibers in one place.

CARDS may be run at a speed sufficient to produce 10 to 13 lb. stock per hr., or, possibly, 15 lb. per hr. Cylinder is run at 165 r.p.m. and lickerin as fast as 350 to 450 r.p.m. if the wires are good; but the usual lickerin speed is less. In running very fine deniers, the speed of the lickerin should be reduced in some instances by 40 to 45% in order to prevent lapping-up. Flats are slowed down to 1½ in. per min., or about 50% of their normal speed on cotton. Calendar rolls are speeded up at least one and at times two teeth, because rayon requires a greater tension on the web between doffer and calender rolls. Some mills place a pan beneath the web if it tends to sag or break; this is generally necessary when acetate fibers or seeds are being run because such webs tend to sag more than viscose.

When the lickerin begins to load or fill up, it should be removed and polished in a box containing emery dust. Unless each tooth of the lickerin is in contact with the cylinder and completely smooth from point to body, there will be loading when fine deniers are carded. The feed-plate setting is widened for fine deniers.

Although flats are run very slowly they must not be completely stopped, or they will unload into the work, causing lumps. This is particularly true when acetate and seed mixtures are being used. Stripping interval depends on type of stock being run, but it is very important to strip before the cylinder begins to unload into the work. For rayon staple, roller stripping is generally employed. The fronts of cards, where fly accumulates on the combs, should be cleaned after each doffing.

With acetate mixes, the top-flat waste usually contains a higher percentage of acetate fiber than of other fibers, which means that great care should be taken in re-running this waste. If it is not distributed carefully, there will be concentrations of acetate which will later affect the dyeing. Top-flat waste from 1½ den. fiber should not be re-run at all because of the fine impurities which give trouble later on. Also, waste from seed or noil stock is likely to contain a higher percentage of this material than the blend calls for.

Cards running acetate often are cur-

tained off to keep the fly out of other work. Humidity in the card room should be from 55 to 60% at all times. Excess oil in bearings, especially cylinder and doffer bearings, should be avoided to keep the oil from running onto the wire and getting into the work.

There is on the market a special hopper for feeding staple directly into the back of the card. This is useful for small lots, but takes up considerable floor space. A recent development in equipment for rayon staple is a special roller card said to give a much higher production with virtually no waste.

DRAWING is accomplished on either conventional or long-draft equipment. On the conventional 4-roll system, it is common to maintain a draft of 6 or under for $1\frac{9}{16}$-in. stock. Running 56-grain sliver on the breaker and 60 grains or heavier on the finisher, the rolls are set $1\frac{3}{4}$ in. between first and second, $1\frac{7}{8}$ in. between second and third, and 2 in. between third and fourth. For heavier sliver, $\frac{1}{16}$ in. is added to each setting.

Bottom clearers must contact working surfaces of steel rolls at all times, and these clearers should be cleaned before they get loaded to a point where they discharge into the work. Tension between front steel roll and calender roll is just enough to prevent overlapping in the trumpet.

Condition of rolls is probably the most important factor in drawing. Smoothly varnished leather or cork top rolls are excellent for this work. Rolls should be inspected often for small nicks or scratches, and cleaned at least every two weeks. The same general weighting is used as on cotton, but this should be checked carefully, as unweighted rolls cause lumps. Oil used must be of a type which will not spread out of bearings.

Creeling is usually done when all cans run out. The machine is thoroughly cleaned and inspected at this time. In piecing ends, care should be used to avoid excessive overlapping. Humidity of 55 to 60% is maintained in the drawing room.

A typical organization for making 1.10-hk. roving from 60-grain sliver, $1\frac{9}{16}$-in. stock, on long-draft system would include a total draft of 7.92, 0.9 twists per inch, 0.86 twist multiplier, settings $1\frac{11}{16}$ in. between first and second rolls, $1\frac{13}{16}$ in. between third and fourth rolls, front-roll speed 125 to 130 r.p.m., flyer speed 680 to 700 r.p.m.

Another organization, for making 3-hk. roving from 60-grain sliver, $1\frac{9}{16}$ in. stock, on a long-draft system would include a total draft of 21.7, 1.44 twists per inch, 0.83 twist multiplier, $1\frac{5}{8}$ in. between first and second rolls, $1\frac{3}{4}$ in. between third and fourth rolls, middle settings constant, front-roll speed 118 to 125 r.p.m., flyer speed 700 r.p.m.

In spinning, drafts can usually be increased above those used on cotton

On conventional slubbers, draft is maintained more or less as on the cotton system. Some mill men prefer three-process roving for yarns finer than 20s, although long-draft slubbing is increasing in popularity. Same general procedure of operating, inspecting, and cleaning applies to long-draft roving as conventional.

In many mills there is a tendency toward production of lighter weight slivers on drawing frames, because these machines operate better when not overloaded. Some have gone as low as 45 grains, others to 50 or 55.

Rollers on roving frames should be cleaned every 8 hr. Steel rolls should be kept clean at all times, especially at the sides of the roller stands. Top rolls should be inspected at regular intervals and bad rolls eliminated. Roll covering loose at the ends will cause faulty drafting, lumps, and other troubles. The same weighting system is used as for cotton.

The roving frame itself should be cleaned after roving is doffed, particularly the steel plates, tops of spindles, bolster rails, etc. Creel boards should be cleaned 10 to 15 min. before creeling time. It is very helpful to clean the top of the bobbins in the creel with a comber duster about half way during the run as fly on top of bobbins causes lumps. Clearers are cleaned before they start discharging waste. Clearers on bottom rolls do not load so fast if they are flat instead of V-shaped. Flyers are cleaned before doffing. Rough roving rods cause lumps.

THE AMOUNT OF A TWIST put into roving varies with the type yarn being made, but it is necessary to put in enough twist to keep the roving from breaking back in the next process. More twist naturally is necessary for nub yarn than for plain rayon.

When running seed or nub mixtures on long-draft frames, remove tongue from folding trumpet. On some machines the condenser between first and second rolls must be removed to allow seeds to go through freely. However, where plain mixes are being run, a condenser between front and second rolls is useful in keeping down fly.

Rayon staple may be spun on either the conventional or the long-draft system. In general, it is possible to increase drafts in spinning rayon staple. Use of aprons, larger rolls, and reduced spindle speeds is common, and twist multipliers are lower than for cot-

ton yarns. Although many manufacturers advocate spinning room humidities of 55 to 60%, the writer finds that anything higher than 45% causes lapping-up on top rolls. His front and back top rolls are covered with cork; slip-rolls are covered with calf.

If the mill is using an unweighted regular top roll in place of the slip roll, spacings should be $\frac{3}{32}$ in. wider than the length of the staple. Draft averages 25% more on long draft than on conventional spinning. Opening in roving trumpet is enlarged when seed or nub yarn is being spun. It is helpful in spinning from double roving to put a wire above the yarn guides to break the end down when the roving runs out. Top clearers should be removed to keep clearer waste out of yarn.

All rolls, back guides, and roller bars should be cleaned every 8 hr.; front guides, every hour. All underwork, tape pulleys, weights, etc., must be cleaned once a week. Travelers should be changed every 60 hr.

It is obvious that every mill must work out its organization according to local conditions. However, typical spinning organizations for some of the blends mentioned in the first part of this article are as follows:

Viscose mix (No. 1 blend)—30s yarn; 3.10 hk. roving; 1 end up in creel; twist multiplier 3.25; spindle speed 8,100 r.p.m.; front-roll speed 128 r.p.m.; settings—top and bottom—first to second roll 1¼ in., second to third roll 1¼ in., slip roll 1.196 grains; ring 1½ in., No. 1 flange, No. 1 circle; No. 2 double-duty square-point traveler.

Viscose and seed mix (No. 3 blend)—18s yarn; 1.50 hk. roving; 1 end up in creel; 3.90 twist multiplier; spindle speed 8,100 r.p.m.; front-roll speed 103 r.p.m.; settings for steel rolls, first to second 1¼ in., second to third 1¼ in.; slip roll 400 grains; ring 2 in., No. 2 flange; double-duty square-point traveler.

Acetate mix (No. 4 blend)—50s yarn; 6 hk. roving; 2 ends up in creel; twist multiplier 4.25; spindle speed 7,600 r.p.m.; front-roll speed 89 r.p.m.; settings for steel rolls, first to second 1⅝ in.; second to third 1¼ in.; slip roll 350 grains; ring 1½ in., No. 1 flange; 10/0 square point traveler, ¾-in. circle.

Silk noil mix (No. 5 blend)—20s yarn; 3.10 hk. roving; 1 end up in creel; 3.90 twist multiplier; 17½ turns per inch; spindle speed 8,100 r.p.m.; front-roll speed 152 r.p.m.; roll settings, first to second 1¼ in., second to third 1¼ in., slip roll, 1196 grains, ring 1½ in.; No. 5 square-point traveler, No. 1 circle.

Latest Trends in Throwing

By C. W. BENDIGO

AFTER EXPERIMENTATION with all sorts and sizes of rayon throwing packages—some as heavy as 32 oz.—it appears that standardization for the present is at 16 oz. for combination yarns and about 8 oz. for crepe. It is hard to say whether this standardization is coincidental, or is the result of successful balancing. Considering the possible economies of standardization and interchangeability of parts, it is to be hoped that progress in package sizes will be in even weights, such as 12 oz. for crepe and 24 oz. for combination yarns.

The phrase "standardization for the present" is used because virtually all the new throwing machines have provisions for going ever larger in size. Present package sizes are largely limited because they represent the maximum practicable with hitherto standard machines; that is, the machine sizes specified in the majority of instances have been 4¼ or 5 in. on crepe and 5¼ in. spacing on doubler-twisters. These two units work together efficiently when plying crepe with normal yarn.

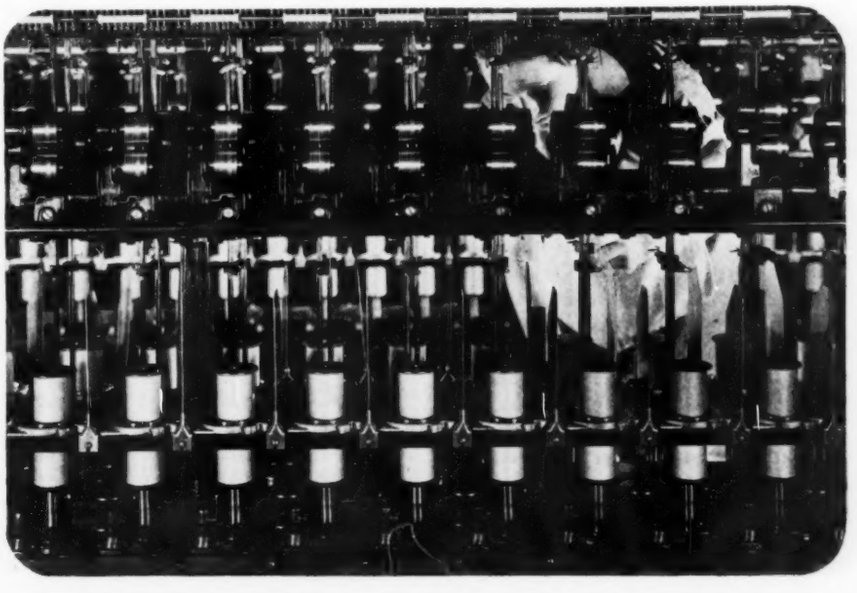
Millions of pounds of crepe and combination yarns are still being thrown on packages smaller than 8 and 16 oz., respectively; but virtually no sizes above these are being run successfully.

IMPROVED MACHINES now on the market are much stronger in order to accommodate the larger packages. Spindle sizes are enormous in comparison to the tiny silk and cotton types on which rayon was hard-twisted in past years. Machine stands and parts are larger and more rugged; belts are wider by ¼ to ½ in.; new materials employed in the new large bobbins keep them light yet strong; ball and roller bearings are essential; and lubricant-retaining or "oilless" parts are now taken for granted.

All new doubler-twisters are now being offered with the traveling balloon guide to equalize tensions. One make of this machine has been radically redesigned, utilizing a rotary knockoff and having springs instead of the more customary weights for both motor-belt take-up and ring-rail counterbalance.

Headless packages have not developed on either crepe or combination, as was variously predicted, although at least two large concerns have experimented on up-twisters and coning machines. Headless package twisters, however, have been developed and are offered for low-twist yarns.

Among other developments in rayon throwing have been widespread use of self-stacking pinboards, along with portable skids and lift trucks to minimize handling; new wear-resisting guides similar to porcelain; plated or hardened metal parts; rust proofed spindles; a spindle vibrometer; new feed-roll thread separator; use of electrical heat in soaking and steaming to do away with the necessity for steam



Package sizes are now as large as present standard machine constructions and spacings permit

during summer months; and the application of fluorescent light for more easily distinguishing colors at night.

NYLON logically will be handled by silk throwsters, but there is still intense interest throughout all throwing plants in regard to twisting this new synthetic. Work along this line is being watched closely by Dupont, but it is felt by the Nylon division that anything now stated would be incomplete. However, at least tentative standard throwing practices are expected to be developed by the end of the year.

Results from soaking Nylon before twisting have not been satisfactory; therefore present experimentation on this yarn includes the novel practice of sizing individual strands after they are twisted.

The yarn's tendency to slip on bobbins necessitates a very open wind—not over 5 wraps to the inch. Twister spindle speeds are low—8,500 to 10,000 r.p.m. at present. Tension is held to the extreme lightness of 4 to 5 grams by a special lightweight fiber flyer with only two arms. The flyer is held in correct position by a spring button. To prepare the thrown Nylon for knitting, a special emulsion is applied on the coner by a slow-speed roll.

Yarn Problems in Knitting

By LOUIS G. GOLDENBERG

IN ORDER TO PRODUCE the best knitted underwear cloth most efficiently, it is up to the men to make the most of the machines and materials with which they have to work. If anything goes wrong, the immediate problem is to determine whether the fault is with the materials, machinery, or men. This article is confined to a discussion of the first factor—materials.

"You get what you pay for" is quite commonly accepted as true and logical statement. But it may not necessarily be true as far as knitting yarns are concerned. In knitting mills one often hears the remark: "It can't be the fault of the yarn; it's the best that money can buy." The fact is that the price of a yarn has nothing to do with its knitting qualities.

Each type of rayon—viscose, acetate, and cuprammonium—has such decidedly individual characteristics both in knitting and in the finished product that no knitter would think of substituting one type for another and expect the same results. Less obvious, but of real importance to the knitter is the difference between the characteristics of yarns of the same type but of different makes, particularly if the pigment or filament count is not the same. When a rayon fabric is analyzed for the purpose of reproducing it, the construction, size of yarn, and type of yarn are not sufficient. It is essential to know filament count and make of yarn. This does not mean that one make of viscose yarn, for example, is basically superior, or that another is basically inferior. It means simply that if a fabric has been accepted as satisfactory, any change in the yarn will have an effect upon the cloth which may be detrimental to it. Therefore, mills should make it a policy not to change the type or brand of yarn during a run of a successful fabric. Every knitter realizes that a consistently uniform product helps him to build and maintain a reputation for quality; and there is no use in taking a chance by substituting one yarn for another, even if it doesn't make any difference nine times out of ten.

ON RARE OCCASIONS even the same brand of yarn may vary from lot to lot. Accordingly, no matter how well a particular yarn has been running, its possible responsibility for trouble should not be overlooked. Recently, a mill which was knitting rayon jersey on fine-gage spring-needle machines suddenly began to be troubled by excessive needle breakage. The yarn ran well and steadily, there were no holes or other defects; nothing but excessive needle breakage. Previous yarn lots from the same manufacturer had given no trouble. There was no difficulty with subsequent lots. No one was able to determine just why that one lot of yarn caused excessive needle breakage. However, it was noted that it had a strong odor of kerosene, while none of the other lots did, indicating that somewhere and somehow it had received a different treatment from usual.

Very often much energy and valuable time are wasted in remedying defects, because the knitter has not been advised that some basic change has been made in the yarn. This is especially true with the relatively fine counts used for underwear. Unless the man in charge of knitting knows of such changes, if trouble develops he is likely to overlook the yarn as the cause until he has checked the condition and setting of the machines. Knitting machines permit a lot of leeway in the size and type of yarn they will knit, but it mustn't be assumed knitting difficulties cannot be caused by the yarn.

Two and two make four, but 50 denier and 50 denier do not equal 100 denier—not in a knitted fabric. A single yarn, which is the equivalent in size of two finer yarns, does not produce an equivalent fabric. Two ends of a finer yarn produce a fabric vastly superior to one made of an equivalent single yarn. Too, the knitting machine prefers the double yarns.

Rayon producers realized long ago that a good package of yarn is important. The right kind of a tube, uniform density, the yarn properly centered on the tube, "tails" easy to get at—all these result in cones of yarn which are safe to handle and easy to unwind. It takes a great deal of skill and care to prepare the excellent rayon yarns which the trade has come to accept as a matter of course. It takes only ordinary precautions on the part of the knitter to keep the yarn in good condition. On the other hand, careless handling can result in a great deal of trouble. A single damaged cone may cause many yards of imperfect goods.

Durable Finishes on Rayon Fabrics

By PHILIP LE BRUN

THE CHIEF DIFFERENCE between the methods now used and those formerly employed for finishing rayon fabrics is in the types of finishing agents applied to the cloth. While the older methods depended on natural materials, such as gum tragacanth, gum arabic, sulphonated castor oil, sulphonated olive oil, etc., the modern methods make use of synthetic resins and complicated organic softeners.

The difference between the types of compounds used is greater than a simple case of natural versus synthetic products. It may be summed up by one phrase "permanence of finish." That is, many of the newer synthetic finishes are intended to withstand a

considerable number of launderings or dry-cleanings, whereas the majority of older finishes did not outlast one.

Some of the better known finishing processes are patented; for example, the Tootal Broadhurst & Lee process for crease resisting and the Zelan finish for imparting water-repellency. Use of certain of the patented processes has been somewhat limited to the finishers in better financial condition, due to royalties which must be paid. Other processes involving the use of synthetic finishing materials are not patented; and some of these are being widely employed in the industry.

A major fault of most rayon fabrics is their inability to retain their shape during usage. They crease readily and bag at the elbows, seat, knees, etc. In addition, many fabrics shrink 5 to 10% upon washing. Processes involving the use of synthetic resins are commonly employed to overcome or reduce these tendencies. Most resin finishes are resistant to washing and dry-cleaning if properly set by baking subsequent to drying at a lower temperature. A few resins, on the other hand, are not fast to these treatments. All-viscose fabrics require the application of a higher percentage of resin than do part-acetate or part-wool materials. All-acetate fabrics are less frequently treated with synthetic resins, as they are likely to become stiff and boardy, unless very dilute solutions are used.

Best known of the anti-crease processes is the T.B.L. method mentioned above, in which a synthetic resin of the urea-formaldehyde type is employed. On all-viscose fabrics, best results are obtained usually by applying the resin from a solution of sufficient strength to impart about 12 to 15% additional weight to the cloth, drying, and setting by treatment for several minutes at 310 to 330° F. To prevent after-odors, it is recommended that the fabric be washed at 110° F. in a weak solution of soap or ammonia.

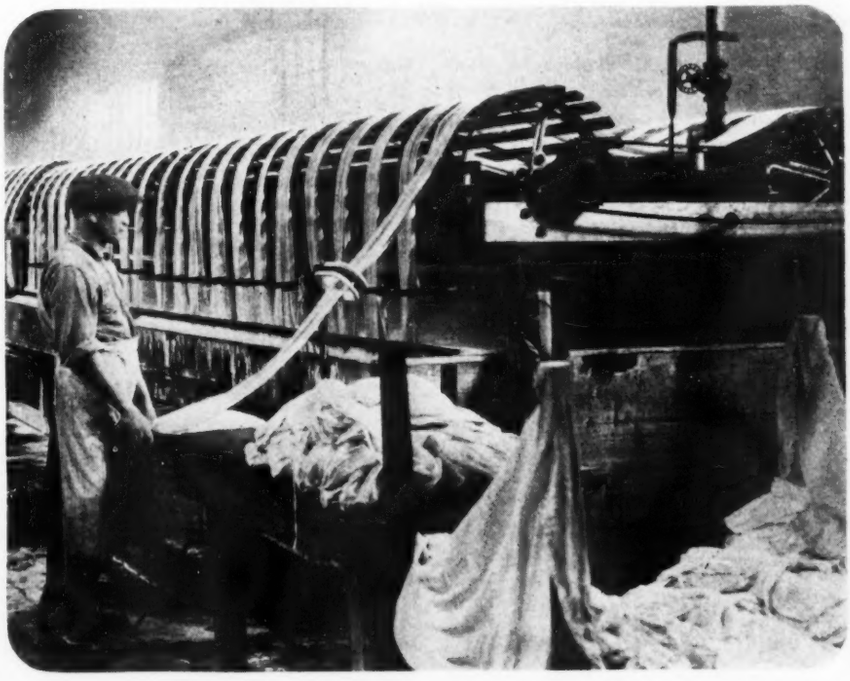
Tendering of resin-treated fabrics upon laundering has been less of a problem to rayon finishers than to cotton finishers, due to the fact that ordinarily garments made from rayon fabrics are not given a chlorine treatment in the laundry as is true, for instance, of white shirts. The tendering appears to be due to the fact that certain resins combine with chlorine and then liberate hydrochloric acid when pressed with a hot iron. Likewise, some of the cation-active softeners have an affinity for chlorine, and are likely to give rise to tendering during laundering of fabrics treated with them. Accordingly, care should be taken in the selection of finishes which are to be applied to any rayon fabric which may be subjected subsequently to a chlorine treatment.

Various types of synthetic resins are employed also to prevent or minimize shrinkage of rayon fabrics during washing. In addition, there are a number of other processes designed to overcome this problem. For example, a process for decreasing the residual shrinkage in part-wool fabrics consists of treating the goods in a solution containing 6 lb. chlorinated starch, 1 gal. formaldehyde (40%), and 1 qt. of sulphonated olive oil to 100 gal. of water. The cloth is passed through a mangle containing this solution and is dried at a temperature of at least 220° F. It is essential in this treatment that the tension in all processes—quetsching, drying, framing—be kept at a minimum. Cloth handled in this way will have a residual shrinkage of less than 3%, provided it is not pulled during any of the processes mentioned above. The Sanforset process for eliminating residual shrinkage announced only last month is so new that technical details are not available. It is believed, however, to differ from methods previously employed.

SUBSTANTIVE SOFTENERS. In the last few years there have been developed a number of substantive softeners of the cation-active type. Chemically, most of these are quarternary ammonium compounds. In rayon finishing, these new softeners are particularly advantageous for treating the heavy, better-grade dress materials and suitings which do not require the addition of fillers to impart body or weight to the cloth, but which have a tendency to be rather harsh. Addition of a small amount of one of the substantive softeners (½ to 1 oz. per piece is sufficient for most purposes) to the last rinse water overcomes the harshness.

The phenomenon of gas or atmospheric fading of acetate fabrics—especially blues—is well recognized. The actual condition is usually a change from bright blue to a dirty reddish blue, or even to a pink in extreme cases. It is due mainly to the presence in the air in some localities of nitrous acid fumes. However, dyes which are particularly bad on acetate goods show no signs of fading when dyed on Nylon yarn. This indicates that the fault is not entirely due to the dyes. A precaution which should be taken in finishing acetate fabrics is to make certain that the sizing used is slightly alkaline. A further step which can be taken to reduce the likelihood of gas fading is to add 10% of sodium thiosulphate to the usual finish and then borax solution until the bath is barely alkaline to litmus paper. This treatment inhibits fading while the goods are in storage or on display, but the effect disappears upon laundering of the fabric. There are available a number of chemicals and special anti-fume finishes which are helpful under certain conditions. Further research is needed, however, for complete solution of the problem.

Ewing Galloway



Addition of a small amount of a substantive softener to the last rinse water overcomes the harshness of heavier rayon fabrics

Vinyon Production

First photographs of various steps in the process employed for making new synthetic

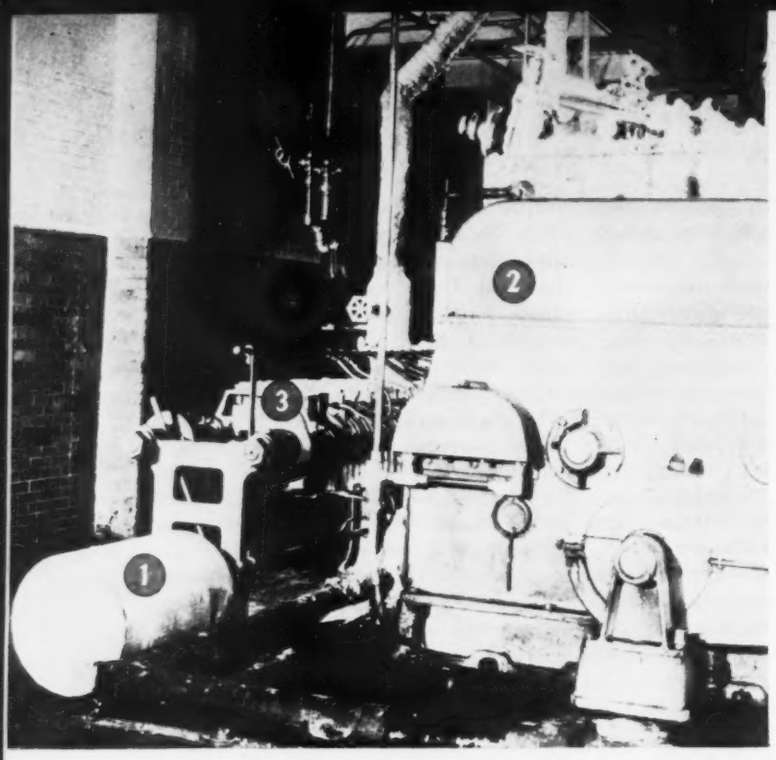


Fig. 1. Vinylite resin received in drum (1) at the Meadville, Pa., plant of American Viscose Corp. is dispersed in acetone in the mixer (2) and is filtered in the filter press (3)

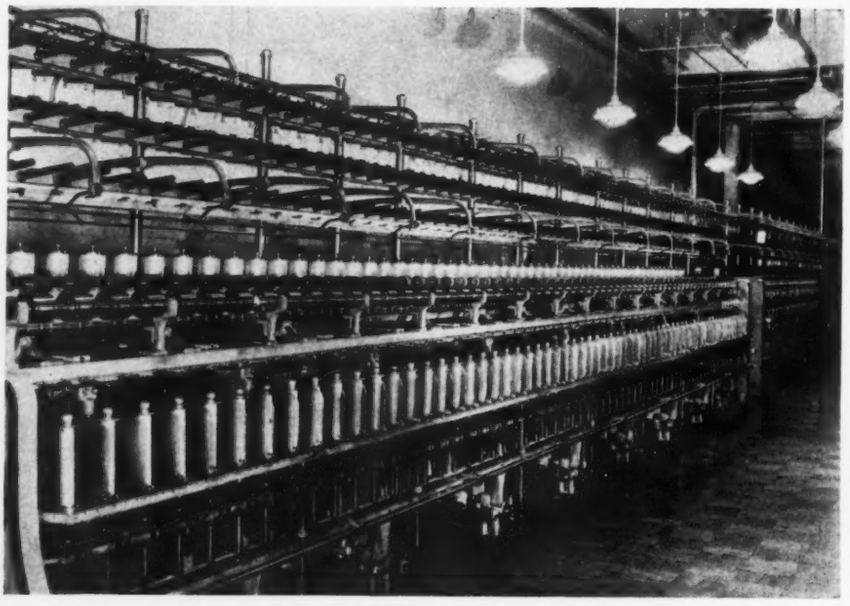


Fig. 3. Next the filaments are oiled and twisted on standard rayon equipment

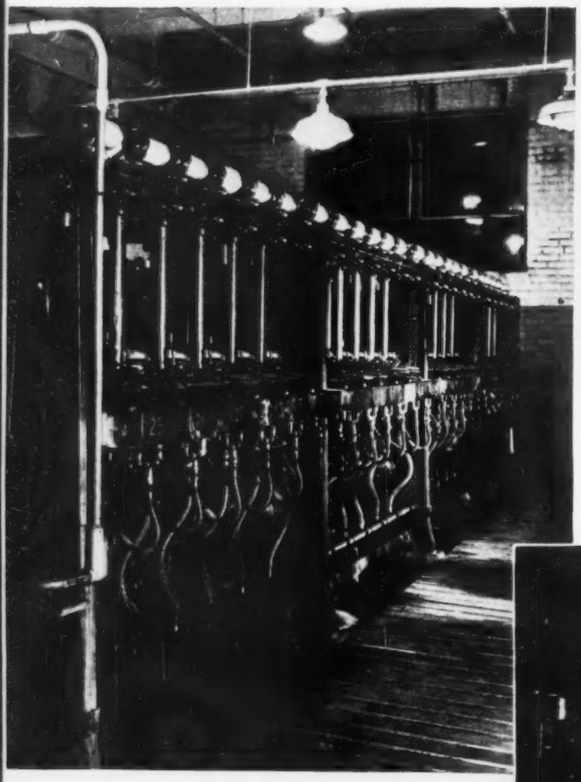


Fig. 2. After the filaments have been formed by a dry spinning process similar to that employed for spinning acetate rayon, they are aged, and then stretched on this machine to give high tensile strength and elasticity

Fig. 4. This equipment is used for spooling the yarn for shipment

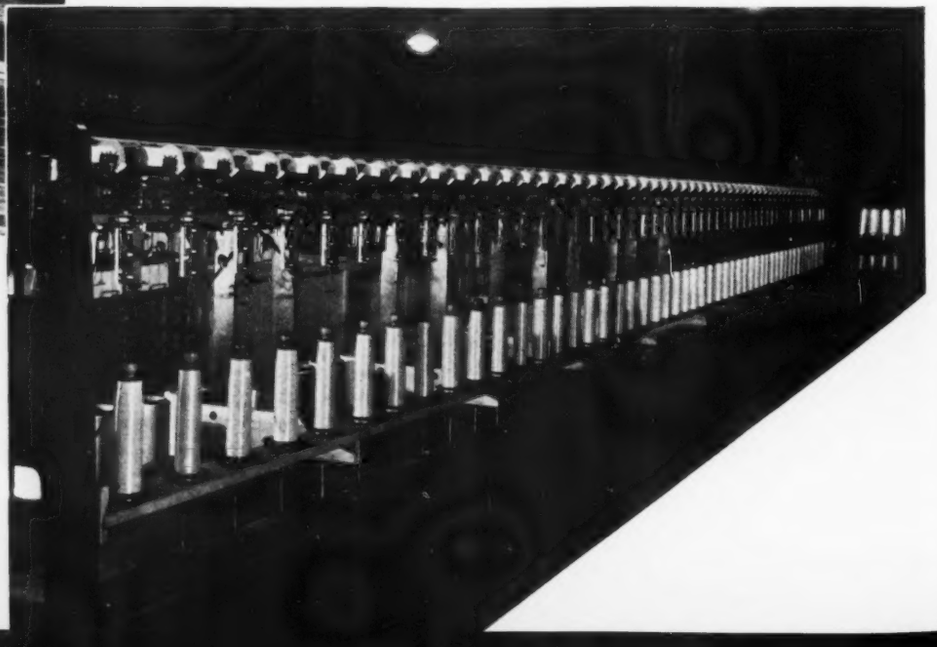


Fig. 1. The gray process room was the first to be air conditioned

Air Conditioning for Nylon Hosiery

Archer Hosiery Mills has installed complete air conditioning equipment

By H. L. KEMPANER
Industrial Engineer, Carrier Corp.
Atlanta District, Atlanta, Ga.

FORESEEING that the use of Nylon would present problems not encountered in the knitting of silk, rayon, or cotton, Archer Hosiery Mills, Columbus, Ga., began long before the yarn was available in commercial quantities to determine what changes would be necessary in its plant. It was found that improper temperature and humidity conditions are among the chief sources of difficulty in fabricating this new material, due to the fact that Nylon is highly susceptible to temperature variations, especially high temperatures.

It was discovered further that in order to obtain best results with Nylon lower humidities and temperatures are required than are necessary with silk and that it is desirable to control both the temperature and the humidity. Accordingly, Archer planned a change in its method of controlled temperature and humidity, and work was started. Two years and some odd months were required for the change.

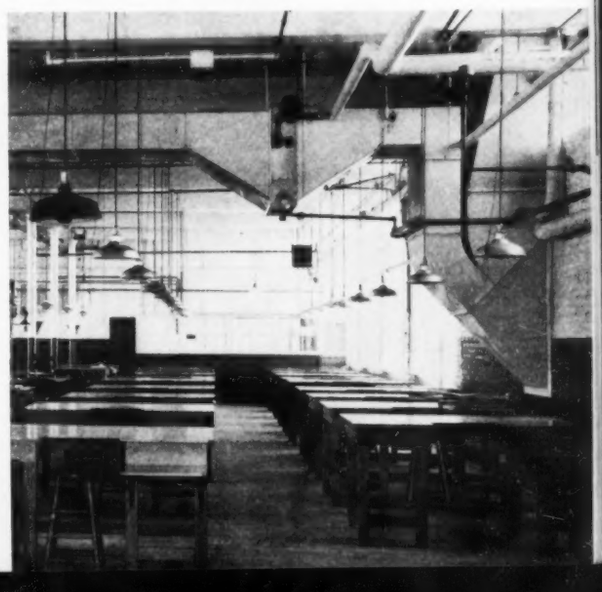
One of the original pilot plants licensed by Du Pont to manufacture Nylon hosiery, Archer Hosiery Mills is also one of the first companies to install complete air conditioning equipment planned specifically to provide proper humidity and temperature for processing Nylon. In fact, this company is recognized in the trade as having pioneered in the installation of this type of equipment. Working with Archer was Carrier Corp., which engineered and installed the air conditioning equipment.

First to undergo the experiment were the finishing and gray process rooms, where a temperature of 85° F. and a relative humidity of 45% were maintained. Partial views in these rooms are shown in Figs. 1 and 2. As Columbus is in a particularly humid section of Georgia, outside conditions of 98° dry bulb and 80° wet bulb necessitated the use of refrigeration to combat what would ordinarily be unbearable working conditions. At the same time, Archer installed air handling equipment, minus the refrigeration, in the boarding room. This system was operated for one summer, and a constant check made on the conditions during that period. Although there was considerable evaporative cooling in the boarding room during the summer, the personnel of the department noted the unusual difference between that room and the gray process and finishing departments.

Visualizing its advantages, Archer installed complete air conditioning; that is, a maintenance of temperature at a desired point, as well as the control of humidity. Next to benefit by the cooling was the boarding room, in which refrigeration was installed. The room housing the air conditioning equipment is shown in Fig. 3; the boarding room, in Fig. 4. Simultaneously, the other rooms were afforded an additional capacity capable of maintaining any conditions between a temperature range of 80 to 85° and a humidity range of from 45 to 60%.

As the fog in the dyehouse could not be minimized in a satisfactory manner, heating and ventilating were added.

Fig. 2. In the finishing room a temperature of 85° F. and a relative humidity of 45% were maintained; now 80° F. and 55% r.h.



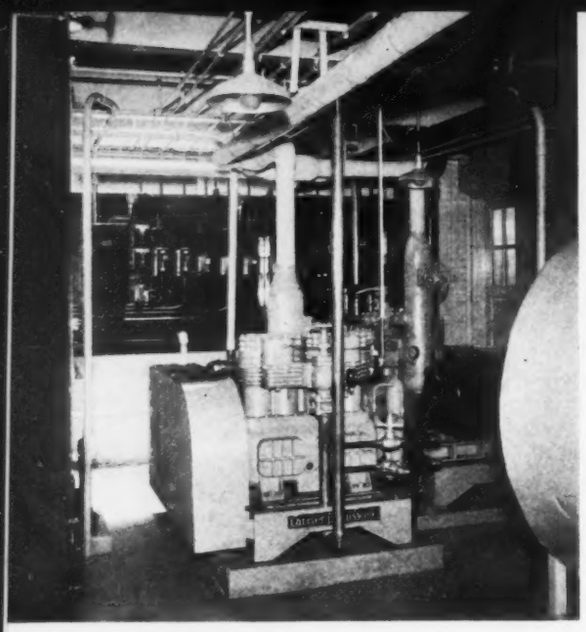


Fig. 3. This room contains air conditioning equipment which takes return outside air, filters and refrigerates it; air is then circulated through distribution ducts to gray process, finishing, and boarding rooms

This additional equipment provided more comfortable working conditions in a humid atmosphere.

HARDEST OF THE DECISIONS to make was that of installing controlled weather in the knitting room—another indication of the vision and aggressiveness of Archer's executives. Although this room had already been provided with equipment of the evaporative cooling type to maintain 60% relative humidity, it was considered justifiable to install refrigeration to give a humidity range from 45 to 60% and temperature of from 80 to 85°. Anticipating production increase, an additional one-third capacity was built on to the knitting room at this time. In the engineering of the air conditioning installation, this additional capacity was considered and allowance made for future expansion in all other departments. A section of the knitting room is shown in Fig. 5.

Considerable renovation was necessary in the knitting room, and the old air distribution system had to be torn out as the room conditions were spotty and air circulation was uneven. Unsatisfactory for handling the cool air, the existing outlets were removed, as their only satisfactory function was the accommodation for the old humidifying and heating conditions. Replacement for the existing outlets were the Carrier Universal type with adjustable vanes in both horizontal and vertical planes, affording positive air direction for all cases.

In conjunction with the outlets, a complete re-design of ductwork was necessary for proper air velocity and quantity. Results of this final installation afford Archer Hosiery Mills the enviable position of being first in the industry with complete air conditioning in the entire plant.

The benefits which Archer expected from this expenditure in its plant were both tangible and intangible. Experiments proved that gumming and kinking of the thread on the knitting machines are definitely reduced to a minimum, which means maximum production with little or no adjusting—the elimination of a major headache to mill owners.

CONSTANT TEMPERATURE — a factor generally ignored—has provided Archer with fewer imperfections in its hosiery. In fact, the first day of knitting operation under 80° and 55%, the mill produced more hose and fewer seconds than on any other day in the history of the company. At the same time, it was discovered by the mill management that the best temperature conditions for Nylon were also best for employees.

Leaving nothing to chance, Archer's further investigations proved that variations of as much as 2 in. can occur in hosiery when conditions of temperature and humidity are not constant. Air conditioning has entirely eliminated these variations with subsequent production savings. Less tangible, perhaps, are the profits derived through increased employee efficiency with consequent increased production.

Weather control in the finishing room was hardest for Archer to justify in early calculations, but comfortable working conditions for the employees reduced damage from perspiration. Packaging was made easier, in that the cellophane for wrapping had a tendency to adhere under improper conditions; with air conditioning, the girls were able to wrap hose at an increased speed.

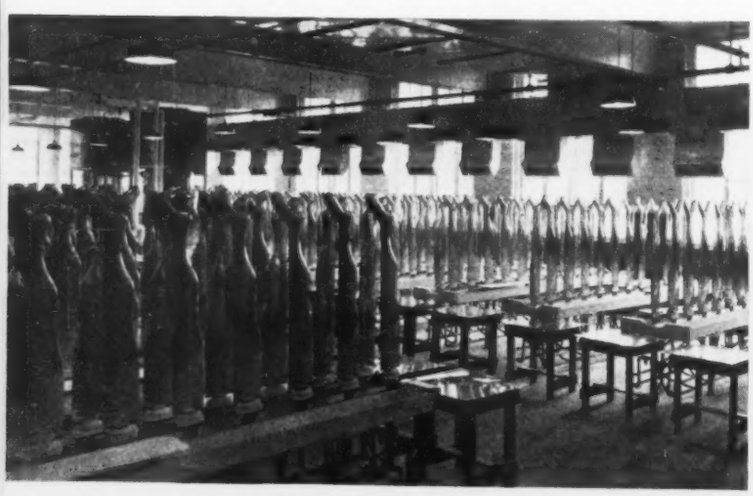
Cleaning, an important item in every modern mill, was greatly facilitated by the introduction of complete control over weather conditions in the entire mill. Cleaning costs at 40c. per hour were appreciably reduced, as well as annual painting costs, as adequate filters clean and wash the air before entrance into the various departments.

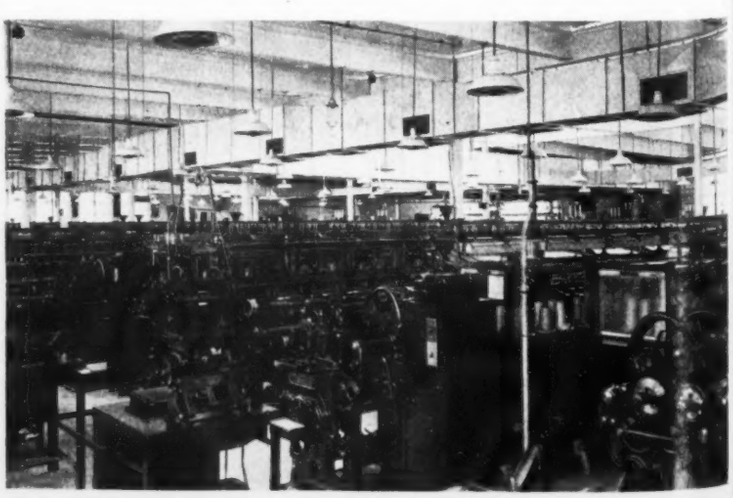
Before making the new installation of air conditioning, Archer Mills carefully analyzed costs from every angle. It was difficult to estimate the intangible advantages of air conditioning, but Archer's progressive management decided that the benefits to be gained justified the cost of the installation.

COSTS now of this production aid may be considered as one-fiftieth that of manufacturing expenses or one-twentieth of the cost of seconds. Most mills estimate the cost of seconds at approximately 50c. per doz. pair—an expensive item in any mill. As stated previously, complete control of air circulation, temperature, and humidity reduces this cost of second-grade hosiery by 10%. From this one can visualize how air conditioning will pay for itself.

Mills which are processing Nylon are speedily realizing the necessity for adequate air conditioning. Hence, as the use of this new fiber becomes more widespread, the pioneering work of Archer Hosiery Mills should be of benefit to the industry as a whole.

Fig. 4. Section of boarding room; a relative humidity range of 45 to 60% and a temperature range of 80 to 85° F. are maintained. Fig. 5. Section of knitting room; controlled temperature and humidity have reduced gumming at needles and number of press-offs and seconds





TEXTILE EQUIPMENT NEWS

Long Staple Rayon Equipment

Saco-Lowell Shops, 60 Batterymarch St., Boston, has introduced a new line of equipment for processing rayon staple fiber up to 3 in. in length. At present, cards, drawing, and spinning assemblies are available and experimental work is under way on machines for other departments.

The card, which is of the roller type, consists of several special units, all assembled on the framework of a standard Saco-Lowell cotton card. The sides, cylinder, doffer, doffer comb, and coiler assembly are the same as those used on the cotton card.

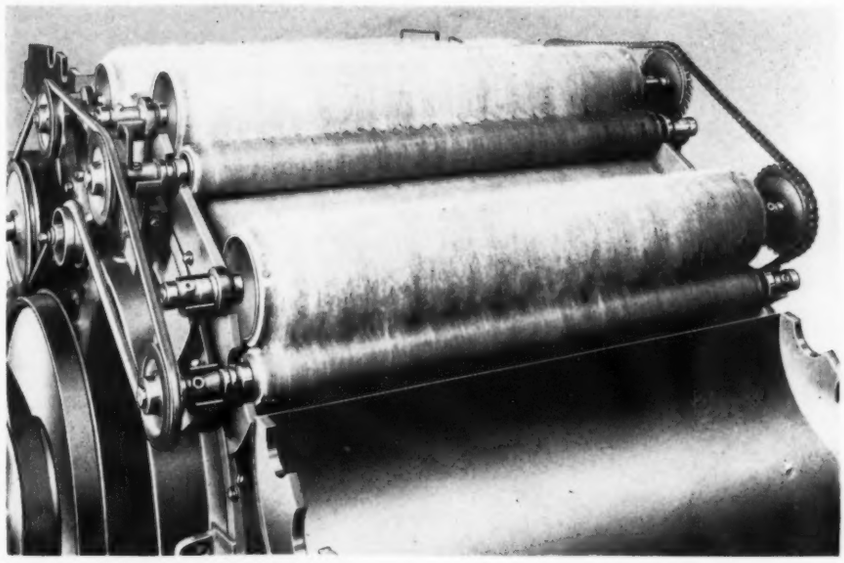
The standard feed plate is replaced with one which is different in shape and has a nose $1\frac{7}{16}$ in. long. Working in connection with this feed plate is a special feed roller which fits the same bearings as the standard fluted roller. The new roller is covered with a tempered point-hardened wire which is said to maintain an unusually effective control over the stock, preventing lumps, curls, and plucking; and assuring smooth separation of the individual fibers from the lap.

A standard lickerin is used, but there are no mote knives and the screen under the lickerin is a solid casing. A new wide back plate, which covers the entire back of the machine from lickerin to the casing over the workers, prevents stock from blowing out.

There is no flexible bend. Flats have been replaced by three workers and three clearers supported in adjustable brackets bolted to the cylinder arch. The three workers, each consisting of a ground-surface steel roll covered by a special wire, are driven by chain and sprocket. A stripper for each worker is covered with special clothing and is driven by *V*-belt. Worker and stripper speeds must vary to meet different conditions but usually strippers turn three or four times as fast as workers.

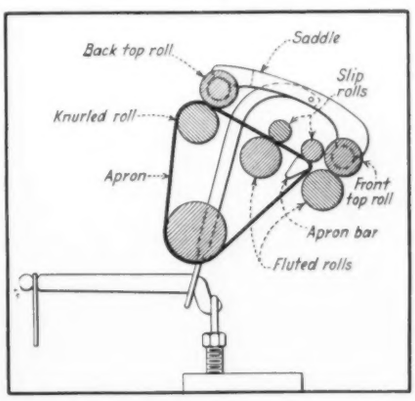
All rollers are inclosed in a closely fitting polished steel housing whose shape and construction are said to permit such control over air currents that fibers on the face of the cylinder are undisturbed. The section from last clearer to doffer is cased off by sheet-steel casings fitted to exclude air.

The special roll assembly for drawing frames has bearings for four lines of rolls and, for mounting, requires a spread of approximately 9 in. Bottom rolls are standard steel flutings, generally $1\frac{3}{8}$ in. Top rolls are usually $1\frac{1}{4}$ in., are mounted in roller-bearing bushings, and are covered with leather, cork, or Koroseal. The manufacturer recommends the following roll settings: first to second, exactly staple length; second to third, staple plus $\frac{1}{8}$ in.; third to fourth, $\frac{1}{8}$ to $\frac{1}{4}$ in. over staple length. The manufacturer also states that with most mixtures best results are obtained at a delivery speed of 100 ft. per min., and with a sliver weight of 55 grains.



Roller card for long staple rayon (Saco-Lowell)

The type *Z* Better-Draft spinning roll assembly can be installed on regular spinning frames with no changes except in some of the elements of the roll assembly. Standard roll stands and bottom-rolls are used with exception of the back roll, which is replaced with a knurled roll. A nose bar is inserted between the first and second bottom rolls. A leather apron is driven by the knurled back roll and is so installed and placed that it delivers the tip of the entering fibers very close to the nip of the front rolls. The top roll assembly consists of a standard leather-covered weighted roll at front and at back and two small unweighted slip rolls.

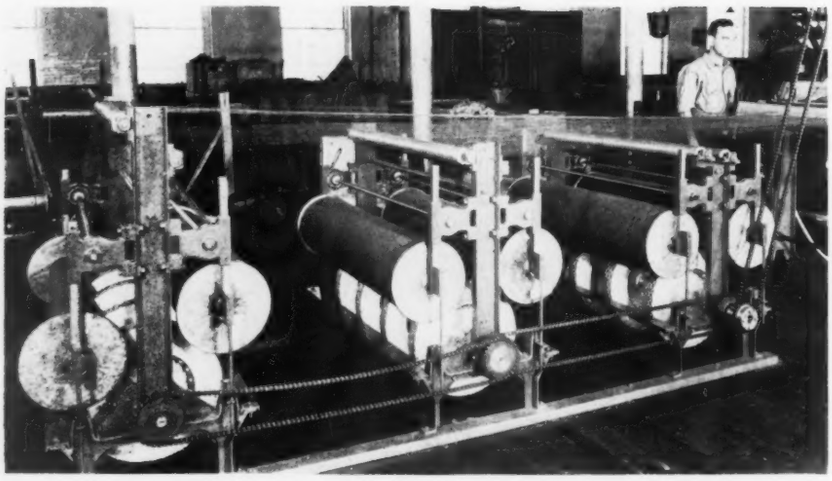


"Z" type spinning-roll assembly (Saco-Lowell)

The back rolls pass the roving forward to the apron. From back-rolls to front slip roll no drafting takes place. The active drafting zone is between front slip roll and front roll nip, and the distance between these is so short, it is maintained, that there is no interval when fibers are subject to haphazard displacement. This is said to make practical drafts as high as 25, with good results.

Jack Spool Creel

A new system for unwinding jack spools recently has been placed on the market by the Sjostrom Machine Co., Lawrence, Mass. The creel consists of a number of units, each composed of several rubber-tired wheels mounted on the same shaft. Each unit serves as a support and drive for two jack spools; the yarn surfaces of the spools ride on the rubber tires. All of the units are interconnected by chains and sprockets



Jack spool creel (Sjostrom)

and a free-wheel clutch connects them to the dressing frame or warper.

Since the yarn surfaces of all the jack spools are connected together, it is stated that uniform tension is maintained from spool to spool and from full to empty, resulting in less breakage and a more perfect warp. No paddles or weights are required.

It is maintained that there is no overrun of spools. When the dressing frame stops, spools stop through the action of the free-wheel clutch, thus making it possible to wind from jack spools at speeds as high as those used in winding from packages.

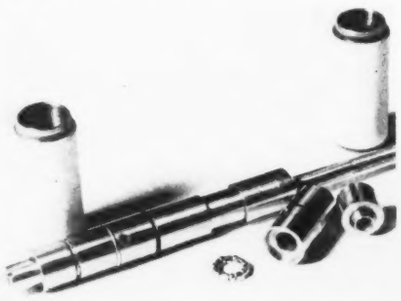
Ball-Bearing Top Rolls

Ball-bearing shell top rolls for spinning and roving equipment, said to embody several unique features, have recently been introduced by Whitin Machine Works, Whitinsville, Mass. One of the chief objectives in bringing out the new product was to offer a ball-bearing shell top roll that would be rigid and accurate, and lint and dirt proof, to the greatest practical degree.

Construction of the roll, it is said, is quite simple. The arbor is a single, strong piece of steel, thicker at the center and tapered at each end. A depression in the center has for its purpose locating the weight hook and assuring equal load distribution to each boss. The retainer contains a reservoir for grease supply; this, it is said, obviates frequent lubrication, rolls requiring this attention only once a year, on a single-shift basis.

Shells are securely held in place by snap rings. They will not, it is maintained, drop off the arbors when rolls are removed from the frame, but can easily be taken off for buffing or recovering.

Diameters available, for spinning frames, are: leather covered, $\frac{3}{4}$ to $1\frac{3}{8}$ in.; cork covered, $1\frac{1}{8}$ to $1\frac{1}{2}$ in.; Koroseal covered, 1 to $1\frac{1}{2}$ in. For roving equipment, diameters available are:



Ball-bearing shell top roll (Whitin)

leather covered, $1\frac{3}{4}$ and $1\frac{3}{8}$ in.; cork covered, $1\frac{1}{4}$ and $1\frac{1}{2}$ in.; Koroseal covered, $1\frac{3}{8}$ and $1\frac{1}{2}$ in.

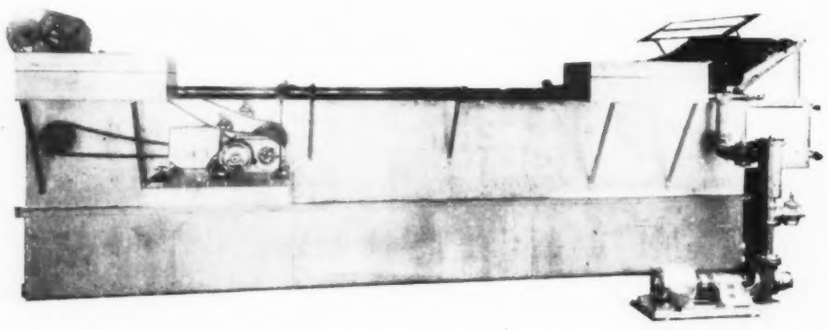
Continuous Boil-Off Machine

Hinnekens Machine Co., Inc., Paterson, N. J., has announced a new continuous boil-off machine designed to handle a wide variety of fabrics at higher rates of production, and to lower labor costs and floor space. It is said that in the new machine break marks, stick marks, etc., are eliminated. The machine is available in three different lengths according to requirements of goods and of production desired. Mechanical features include double let-off for continuous running, variable speed conveyor which keeps goods at full width without wrinkles, stainless-steel carrying rods with adjustable speed, variable-speed drive on perforated outlet drum, and main variable-speed drive for whole machine. It is said that the machine can be operated by only three men.

Electrically Operated Truck

Announcement has recently been made of a small electrically-operated truck which handles, in a typical instance, 400-lb. bales of piece goods. It is manufactured by Elwell-Parker Electric Co., 4205 St. Clair Ave., Cleveland. The truck, which is driven by three separate motors, is said to be capable of handling loads up to 2,000 lb. It can travel aisles 4 ft. wide, go through $4\frac{1}{2}$ ft. doors, and turn completely on a 46-in. radius, it is stated.

Electrically-operated truck (Elwell-Parker)



Continuous boil-off machine (Hinnekens)

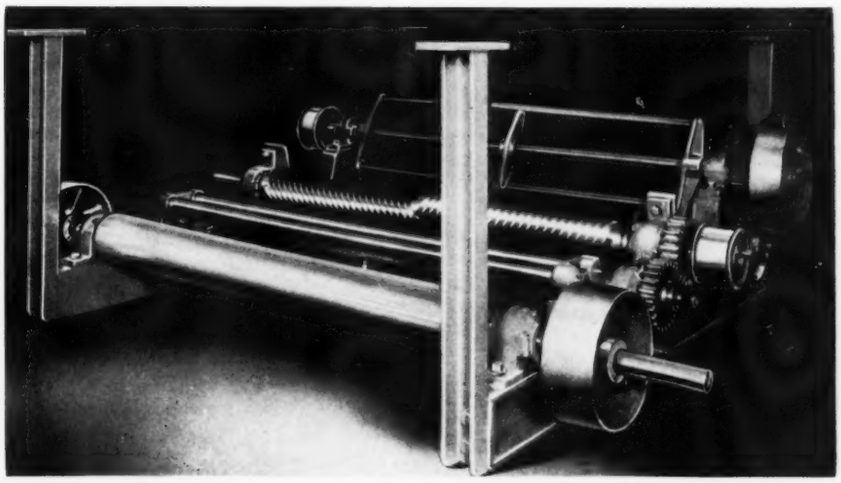
Scutcher and Hydraulic Calender

Two machines recently put on the market by H. W. Butterworth & Sons, 2117 E. York St., Philadelphia are the Type S light scutcher and a 3-roll hydraulic rayon calender.

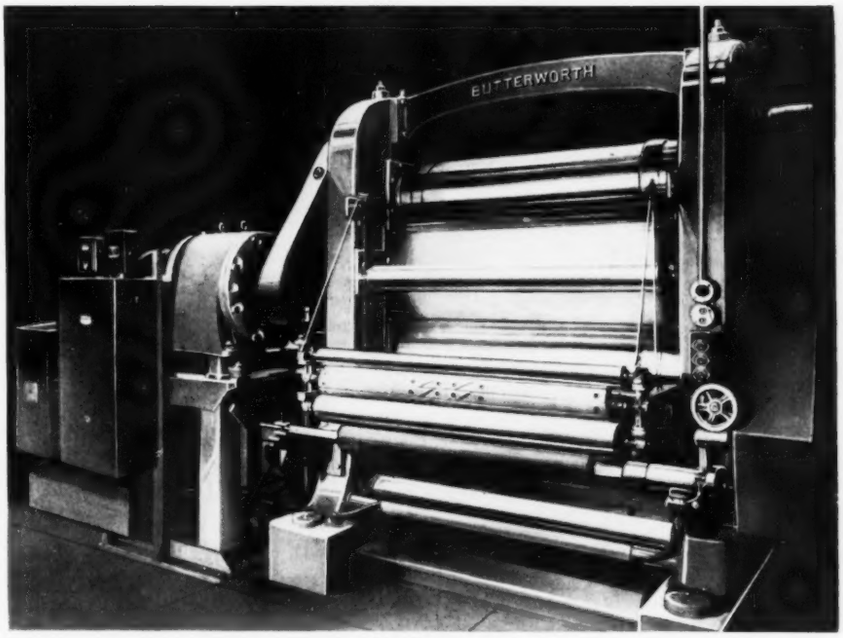
The scutcher is made for fabrics 40 in., 50 in., and 60 in. wide. Beater bars are of high-grade phosphor-bronze tubing, welded to bronze heads. Scroll rolls are milled from heavy-wall brass tubing by a special process. There are no soldered or riveted strips to come loose, with resulting damage to cloth or operator. Governor bars are of brass tubing mounted on a rugged cast-brass frame, pivoted on ball thrust bearings and balanced for sensitive operation. Beater bars, scroll rolls, and brass-tube delivery roll are mounted in self-aligning ball-bearings. Cast-iron vertical supports for ceiling mounting are furnished to required specifications, and a top roll can be furnished if desired.

The 80-ton, 3-roll hydraulic calender for rayons is driven by a 30 h.p., two-speed geared motor mounted on a gear reduction unit capable of standing loads or reducing speed instantly. It drives from reducer to top roll by roller chain; cloth speed ranges from 40 to 80 yd. per min. The top roll, of chilled iron, is steam heated. The middle roll is of cotton, and the bottom roll is of chilled iron, and is steam heated. Top- and bottom-roll bearings have an oil circulating and cooling system.

Outstanding features of the calender cited are a new-style balanced let-off, moulded fiber 3-bar adjustable tension device, rolls mounted in heavy-duty roller bearings, special slip belt winder with clutch, streamlined fully inclosed hydraulic pump, new style accumulator with safety switches, and special valves for control of hydraulic equipment.



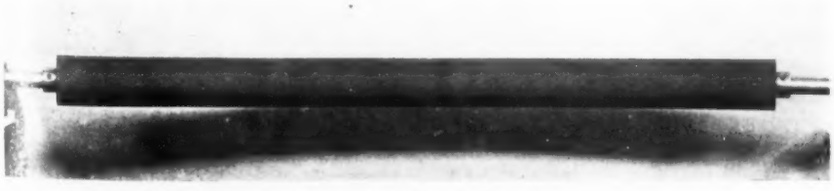
Type S scutcher (Butterworth)



Calender for rayons (Butterworth)

Rubber Expander-Bar

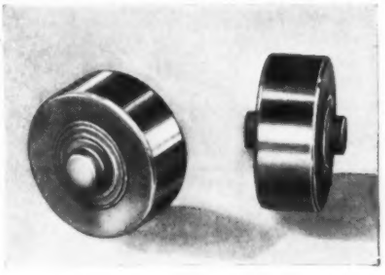
Recently announced by Birch Brothers, Inc., Somerville, Mass., is an improved single-curved-bar rubber expander for the stretching of cloth before such machines as mangles, printing machines, dye jigs, dry cans, etc. It is said that the use of a greater thickness of a higher grade rubber gives better stretch and longer life, and that an improved type of bushing is trouble-free.



Expander (Birch Bros.)

Bearing for Loom Treadle Rolls

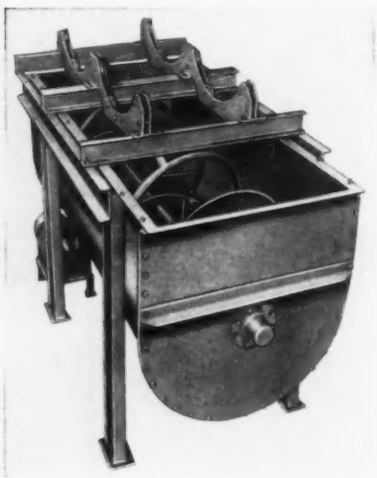
New Departure Division of General Motors Corp., Bristol, Conn., has announced a new design of treadle-roll ball-bearing, developed for use on Draper looms. The new bearing is said to be completely protected from dirt and lint, fully lubricated for long life, and practically to eliminate loom shutdowns for roll replacements. A high-carbon chrome-alloy steel is used for the bearings, and they are said to be extra heavily built to absorb shock.



Treadle roll ball-bearing (New Departure)

Stainless-Clad Mixing Tank

A stainless-steel clad mixing tank built by L. O. Koven & Bros., Inc., Jersey City, N. J. has recently been introduced. It can be used for mixing liquids with other liquids, or with dry



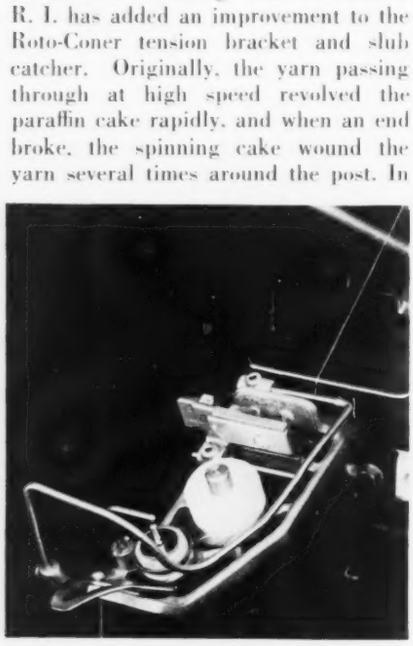
Stainless-clad mixing tank (Koven)

or semi-wet solids. The tank can be jacketed to heat or cool its contents during mixing.

Walls of the tank are made from plates manufactured by Jessop Steel Co., Washington, Pa., and consist of .086 in. of stainless-steel cladding inseparably united to .351 in. of mild steel backing.

Tension Bracket and Slub Catcher

Universal Winding Co., Providence, R. I. has added an improvement to the Roto-Coner tension bracket and slub catcher. Originally, the yarn passing through at high speed revolved the paraffin cake rapidly, and when an end broke, the spinning cake wound the yarn several times around the post. In the base of the cake holder have been placed two fingers which exert a braking action on the cake and cause it to revolve more slowly. The decreased speed of the cake is said effectively to stop the winding of yarn around the post.



Tension bracket (Universal)

Useful Accessories for Textile Mills

Fluorescent Lamp. Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., has announced an open-end twin-lamp fluorescent luminaire, utilizing 40-watt, 48-in. white or daylight fluorescent lamps, designed especially for general or supplementary lighting of low bay industrial areas. Unit is available for operation on 110-125, 199-216, and 220-250 volts, 60-cycle, a.-c. current.

Variable-Speed Equipment. Reeves Pulley Co., Columbus, Ind., has introduced a low-cost variable-speed unit by which standard constant speed motors up to 1½ hp. can be converted to provide complete speed adjustability for the machines they drive. The same company has introduced an improved type of handwheel speed indicator for use with its regular variable-speed units.

Multi-stage Unit Pumps. Allis-Chalmers Mfg. Co., Milwaukee, Wis., has recently extended its line of multi-stage unit pumps in which motor and pump housings are bolted together. Included is a new two-stage pump with 4 in. suction and 2 in. discharge, that can be rated up to 275 gal. per min. against heads up to 500 ft. at a speed of 3,550 r.p.m.

Steam Traps. Armstrong Machine Works, Three Rivers, Mich., is marketing two new steam traps, features of which include more rugged construction, freer flow of water, one-piece stainless-steel buckets, and single casting size for both ½ and ¾ in. pipe connections.

Materials Handling Equipment. Cleveland Tramrail Division of Cleveland Crane & Engineering Co., Wickliffe, Ohio, has announced a new series of tramrail arch beam for overhead materials handling systems for loads up to 5 tons. The new arch beams, like smaller sizes, can be used with either hand operated or electrified tramrail systems.

Fluorescent Lighting. Wiremold Co., Hartford, Conn., is introducing a complete, self-contained luminaire for two 40-watt fluorescent lamps; advanced reflector design is said to give more efficient distribution of light in working areas, resulting in extremely high overall efficiencies. This company has also announced a new series of auxiliaries for use with all sizes of fluorescent lamps and a series of single, double, and triple industrial-type units for use with fluorescent lamps from 18 to 48 in.

Industrial Fans. Hartzell Propeller Fan Co., Piqua, Ohio, has recently extended its line. A new propeller, known as the Tear-Drop, is said to provide economy in power consumption even when both speed and blade pitch are changed to give exactly the amount of air desired.

Watchman's Inspection System. Dudley Lock Corp., 325 N. Wells St., Chicago, has developed a new tour system said to provide complete mechanical control over watchmen's activities and protect them in case of mishap. It compels inspection of specific parts of a property at prescribed time intervals and can flash or permanently record the time of inspection and summon aid in emergencies.

Welding Electrodes. Lincoln Electric Co., 12818 Coit Rd., Cleveland, has announced two cast abrasion-resisting alloy electrodes for hard-facing by the metallic arc process.

Limit Switch. General Electric Co., Schenectady, N. Y., has introduced a small-size geared-type limit switch for application on motor-driven devices where it is necessary to limit rotation of motor shaft or some other shaft or gear on the driven machine. The device is designed for 125-volt, 4-amp., a-c. operation; and 125-volt, 1-amp., d-c. operation.

Lubrication System. Farval Corp., 3255 E. 80th St., Cleveland, has developed a "Junior" centralized lubrication system for application to small machine tools and other equipment. A corresponding line of fittings, hose, couplings, and other accessories is also available.

Pyrometer Controller. Bristol Co., Waterbury, Conn., is marketing an electronic pyrometer controller in which moving parts are said to be completely eliminated from the control circuit.

Plywood Panels. Speedwall Co., Seattle, Wash., is producing plywood panels in sizes up to 8x20 ft. and faced with fabric. The material is expected to be of interest to mills constructing or modernizing villages. The size of the panels is said to eliminate joints and its surface to provide a base for decoration on which checking and cracking are minimized.

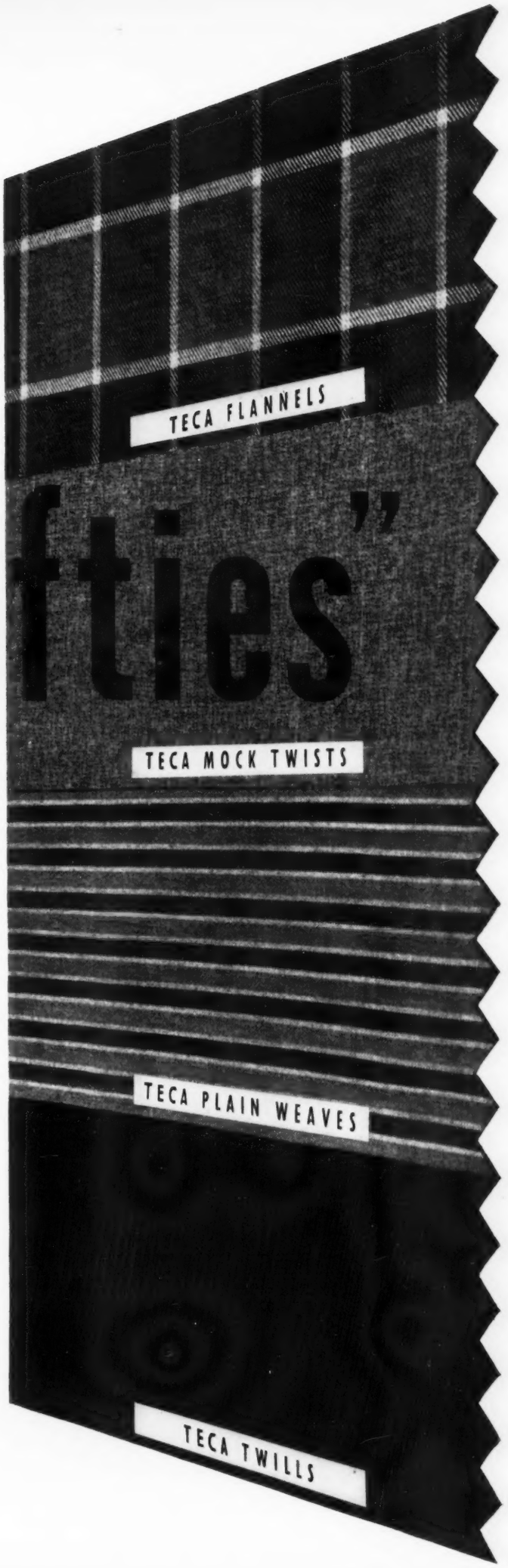
Motor Starter and Switch. Cutler-Hammer, Milwaukee, Wis., has announced an improved motor starter and disconnect switch available with either

NEW HIGHS IN FABRIC VALUE

Teca "fifties"

(blends containing 50% or more Teca)

Here are fabrics which really have life in them. Even a small percentage of Teca, Eastman's crimped acetate rayon fiber, blended into a yarn with other fibers, steps up a fabric noticeably. A high percentage results in extra vitality, extra sag and crush resistance. And these are extras that last, because they are more than surface deep. They are built into a weave, through and through. That's why the new "Teca fifties" are among the best sellers in so many of the important fall collections.



Eastman

CRIMPED ACETATE RAYON

A. M. Tenney Associates, Inc., 10 East 40th Street, New York City. Sales representatives for the Tennessee Eastman Corporation, Kingsport, Tennessee, subsidiary of the Eastman Kodak Company.

three or four poles, in five sizes, horsepower ratings from 6½ to 200 hp. The starter can be furnished in water-tight, dust-tight and in NEMA Types 7 and 9 enclosures for hazardous locations.

Portable Belt Lacer. Safety Belt-Lacer Co., Toledo, Ohio, is introducing a portable lacer said properly to lace from 1 to 15 in. of belt width in one quick operation.

New Dyes and Chemicals

Conditioning Agent

For conditioning cotton yarns where it is desired to set the twist and remove the kinks before weaving, Borne Scrymser Co., 17 Battery Place, New York, announces a new compound known as Meon T. It is stated that since usually the moisture absorbed at the conditioning machine evaporates rapidly, the degree of twist setting may not be correct for uniform weaving. On the other hand, when Meon T is employed, this rapid evaporation is prevented and the regain can be fixed high or low, depending on the amount of moisture wanted. Regardless of whether the moisture content is high or low, the yarn is said to remain limp and without kinks, and breaking strength is said to be decidedly increased.

Soap Substitute

Development of a new soap substitute has been announced by Warwick Chemical Co., West Warwick, R. I. The new compound, known as Sulfanole K, is recommended for use in scouring, boiling-off, and dyeing silk, rayon, cotton, or wool, in form of raw stock, yarn, hosiery, and woven or knitted fabrics. Advantages cited include excellent wetting, penetrating, and rinsing properties; and immunity to hard water, alkali, and acids.

Anti-Shrink Process for Rayon Fabrics

To prevent shrinkage or stretchage of fabrics made of viscose type continuous-filament or spun-rayon yarns, the Sanforized-Shrunk division of Cluett, Peabody & Co., Inc., 70 Worth St., New York, has recently introduced a new finishing process. This process, called the Sanforset process is described as a chemical treatment which stabilizes the fabric without altering it in hand or finish. This process was developed by the Heberlein organization in Switzerland, and Cluett, Peabody & Co., have been made exclusive licensee in this country with the right to grant sublicenses. Demonstrations have been conducted in several finishing plants and at least one finisher has been licensed to use the process. To be labeled "Sanforset Treated and Tested Rayon," fabrics must not shrink or stretch, within a strict tolerance, when tested by a washing and pressing test comparable to the treatment garments receive in a commercial laundry. It is stated that fabrics treated by the Sanforset process do not develop any latent deficiencies, such as brittleness, odors, skin irritation, or decreased wearing qualities, and that there is no effect on the usual finishes applied. No special equipment is needed, for carrying out the process.

Synthetic Scouring Agent

A new synthetic scouring agent, known as Cyclopon A, has been announced recently by General Dyestuff Corp., 435 Hudson St., New York. Cyclopon A is particularly recommended for the following purposes: scouring of greasy wools, washing of oily wool yarns and wool piece goods, boiling-off of rayon fabrics, and preparation and scouring of cotton-and-rayon mixed fabrics. The stability of Cyclopon A to lime salts permits its use for removing precipitated lime soaps from fabrics. The new product is said to scour effectively without the formation of excessive lather and frothing on the machines, and to be stable to acids and alkalis, as well as lime salts.

General Dyes

General Dyestuff Corp. announces the following new products: Benzo Green GA Conc., a direct dye producing yellowish green shades of good fastness to rubbing, ironing, alkali and acid; fastness to water is improved by an after-treatment with Solidogen BSE: dyeings can be discharged to a satisfactory white with Rongalite C.

Celliton Fast Purple D, a dispersed direct-dyeing acetate dye, producing bright violet shades of a bluish cast; dyeings have very good to excellent fastness to light.

Calco Colors

Calco Chemical Division, American Cyanamid Co. announces the following products: Calcocid Alizarine Green CGW (for acid dyeing) and Calcocid Alizarine Green CGN Extra (for neutral dyeing), two acid dyes yielding on wool bluish green shades of very good fastness to light, washing, sea water, and perspiration; and good fastness to fulling.

Calcogene Violet Brown CF, a sulphur dye recommended for use on both cotton and rayon staple fiber to yield shades having all-round very good to excellent fastness.

New Publications

If War Comes

M-DAY . . . WHAT YOUR GOVERNMENT PLANS FOR YOU, by Donald Edward Keyhoe; E. P. Dutton & Co., New York; 1.00.

This book falls into the "shot in the arm" or "kick in the pants" category. This reviewer would not go to it for detailed information, but he would go to it—and make his friends go to it—to learn anew what may happen to you and to me "if war comes."

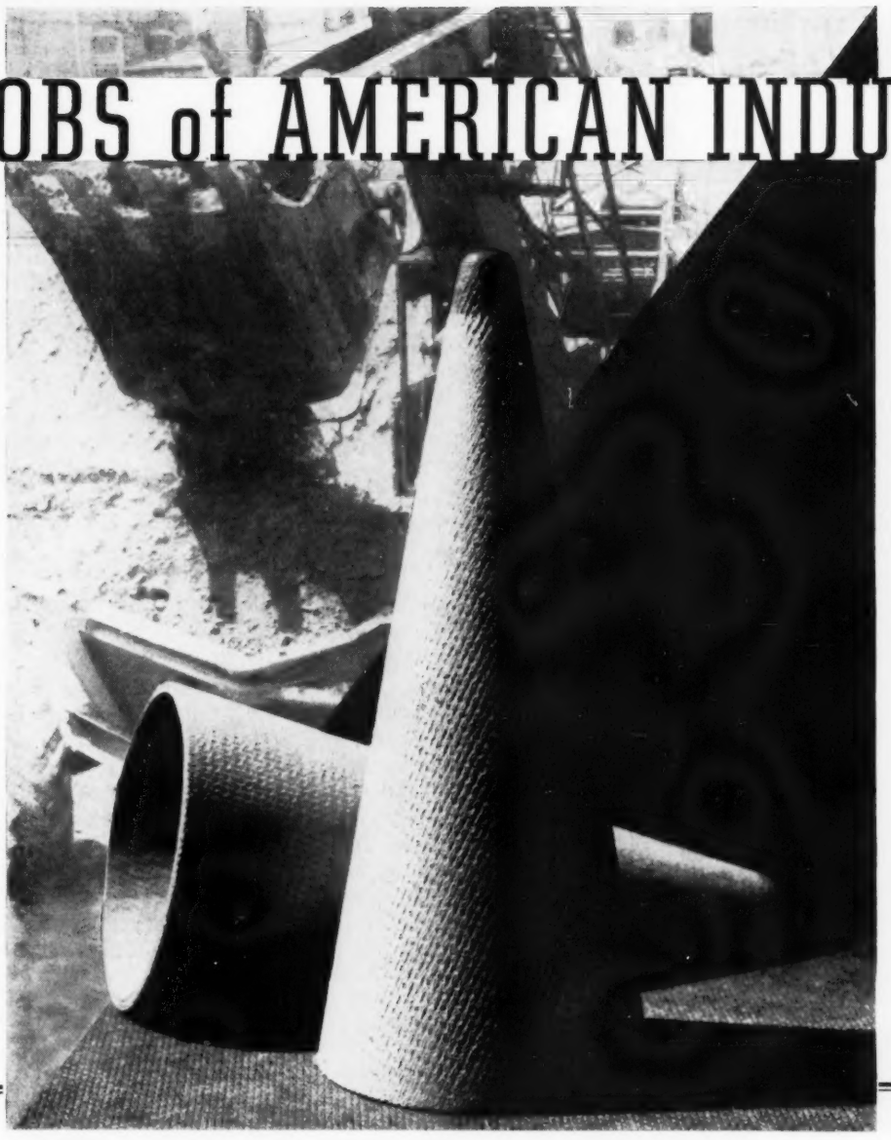
It seems unbelievable that war could hold any surprises after less than a quarter-century of peace, but after all millions now alive were either nonexistent or in diapers on M-day in 1917—and the rest of us . . . well, memory is short.

The author, Mr. Keyhoe (one letter shy of aptly-named former chief of information, U. S. Department of Commerce) unveils the surprises in store during America's "struggle to be free" . . . surprises for Bill Warren, doorman at the University Club; Alan J. Eidler, wealthy clubman, and Mathers, his solemn valet; Mrs. Lottie Sprague, plump 52-year-old manager of the Acme Tailoring Co.; John Jay Leare, actor; Mabel Streim, "dime-a-dance" girl; Director von Grucke, of Colossal Pictures; and Prisoner 97631, in the gray State prison, at Ft. Madison, Iowa.

These, and millions more. . . .

Industrialists will want to read the chapter "Wheels of War." All will want to read the chapter "Drafted Men." In the latter chapter one learns that in the textile industry, less than half the men may expect deferment—as against almost 100% in the Big

BIG JOBS of AMERICAN INDUSTRY



depend on many little jobs well done ~

The steam shovel does a spectacular big job. It attracts many "watchers," few of whom realize that big jobs are accomplished only through the coordination of many essential little jobs.

Today American Industry is engaged in the biggest job of all time . . . and the whole world is looking on.

One of these small, unspectacular but essential jobs is being efficiently done at SONOCO; the dependable supplying of paper carriers for big jobs in the Textile Industry.

SONOCO MAKES *EVERYTHING* IN *PAPER CARRIERS*

SONOCO PRODUCTS COMPANY

BRANTFORD ONT. | HARTSVILLE S. C. | MYSTIC CONN.

DEPENDABLE SOURCE OF SUPPLY

Three: munitions, shipbuilding, steel.

It's a snappy book, a frightening book, and yet a hopeful book, because it promises at the end that "supreme victory will have been won."

War and the Business-Man

ADJUSTING YOUR BUSINESS TO WAR (revised and enlarged edition), by Leo M. Cherne; the Research Institute of America, Inc., New York; $5.00.

The possibility that the United States may not be able to maintain her peace-time status is one which the American business man must face. This book is a fairly comprehensive study of the plans which have been made, so far, by our Government for industrial mobilization in the event of war.

Although written for business in general, Mr. Cherne's book points out that the textile industry is essential in a war economy and that an orderly transition from peace-time status to a maximum war efficiency—at the same time guarding against drastic post-war readjustments—will not be an easy one. Price fluctuations, restrictions of styles, models and sizes, standardization of colors and reduced distributive costs will form only a part of the great maze which will have to be solved by industry.

To all business-men who wish to learn beforehand what problems M-day is likely to leave on their doorsteps, this book offers a fund of information. Its purpose is to show business how it can take effective protective measures now and how it can make preparations to assist in the program for national defense and to carry out a successful war campaign should it become necessary.

Sickness and Labor

SICK ABSENTEEISM IN INDUSTRY: Air Hygiene Foundation of America, Inc., Pittsburgh, Pa.; 25 c.

This booklet is the report of a symposium on "Sick Absenteeism in Industry, Its Extent, Its Causes and Control." It is the first step in a program being started for the purpose of reducing losses suffered by management and labor from sickness.

Drycleaning Facts for All

TEXTILE FABRICS IN REGARD TO DRY-CLEANING, by Pauline Beery Mack, Charles R. Phillips, and Frank A. Weller; Home Economics Research Series, Pennsylvania State College Bulletin, State College, Pa.; 83 pages; 50c.

This bulletin gives a brief resumé of characteristics which affect the drycleanability of textile articles, and includes mention of such items as fibers, weaves, dyes, finishes, and shrinkage. It should be of particular interest to teachers of textiles and home economics, retail merchants, and drycleaners.

A Report and a Challenge

TEXTILE MARKETS; Report of the Committee on Textile Price Research; Stephen J. Kennedy, chairman, and Hiram S. Davis, vice-chairman; National Bureau of Economic Research, New York; $3.00.

This is certainly one of the most important books to enter the field of textile literature. It is both a report and a challenge, and represents a perfectly swell job done by an able committee.

In Part I, *The Textile Markets*, all textile fibers and their markets are carefully studied and an analysis of price characteristics according to the various levels of manufacture of each fiber is given. At the same time the scope of the markets at each manufacturing level is outlined.

In Part II, *Areas of Research in the Behavior of Textile Prices*, in which nine areas of study are outlined, the committee hands a challenge of further research to every intelligent reader of the book. But in challenging, suggestions are also offered as to ways and means of attempting to clear up some of the problems in price behavior.

Appendices made up of compiled price series issued by divisions of the Bureau of Labor Statistics covering all important textile markets, and a chart depicting the inter-relations of textile markets add valuable information and complete the cycle of the study.

This book has been welcomed by all students of textile economics but it should also be studied by every person in the executive end of manufacturing or merchandising textiles. By understanding the price characteristics of other fibers one will better understand the price behavior of his own product, and understanding which leads to better economics is the idea behind this research project.

For Employee Publications

POST-CONVENTION BULLETIN, American Association of Industrial Editors, 1964 E. 9th St., Cleveland, Ohio.

This 24-page bulletin is full of ideas for an editor of an employee publication. The material was all presented at the first annual convention of the association. Among the subjects covered are: Value of Employee Publications to Industry; What Employee Publications Should Contain; Making the Employee Publication Interesting to the Reader; Pictorial Aspect of the Employee Publication, etc., etc.

News of Suppliers

Morton Chemical Co., Greensboro, N. C., is expanding its manufacturing facilities and opening a branch office in the Woodside Building, Greenville, S. C. Robert E. Buck is in charge of the Greenville office.

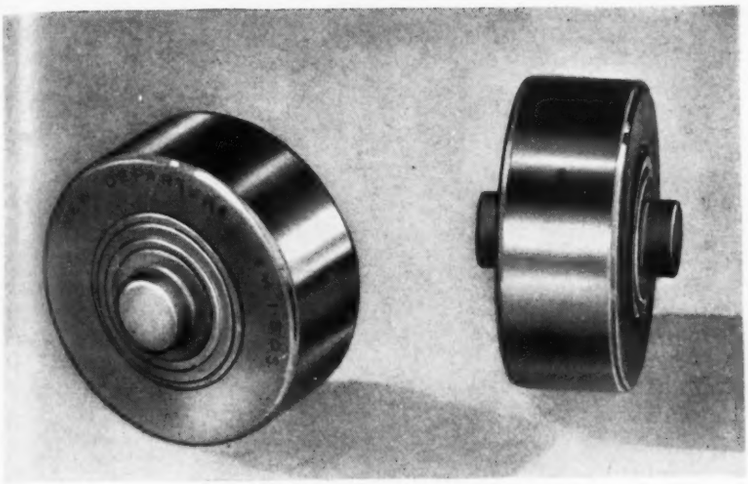
Stein, Hall & Co., Inc., New York, announce the retirement of William A. Boyd as manager of their Providence branch office, and the appointment of Joseph A. King as his successor. Mr. Boyd has been associated with the company for 37 years. Jesse Fraser has joined the Providence sales staff, and William S. Newell has been transferred from Providence to cover the Maine territory under the direction of R. D. Armstrong, Boston branch manager. George H. Norton has taken over most of the textile territory which Mr. Newell formerly covered out of Providence.

National Starch Products, Inc., Dunellen, N. J., held its annual picnic for employees at Mt. Bethel, N. J., last month. Frank Greenwald, president of the company announced to the gathering that his company, regardless of legislation, would not only properly re-employ any members of the organization drafted for military training, but would also pay them sums during their period of service, consistent with the ability of the company and the methods generally accepted by the best and most substantial companies in this country.

Allis-Chalmers Mfg. Co., Milwaukee, Wis., has appointed F. J. Geiger as assistant manager of the electrical department, in complete charge of sales and engineering at the company's Norwood, Ohio, plant, succeeding C. J. Rattermann, retired.

Quaker Chemical Products Corp., Conshohocken, Pa. has broken ground for a new laboratory. Construction is all brick and concrete. It will accommodate 15 research chemists working purely on research and development work. The old laboratory will continue to be used for control and plant work.

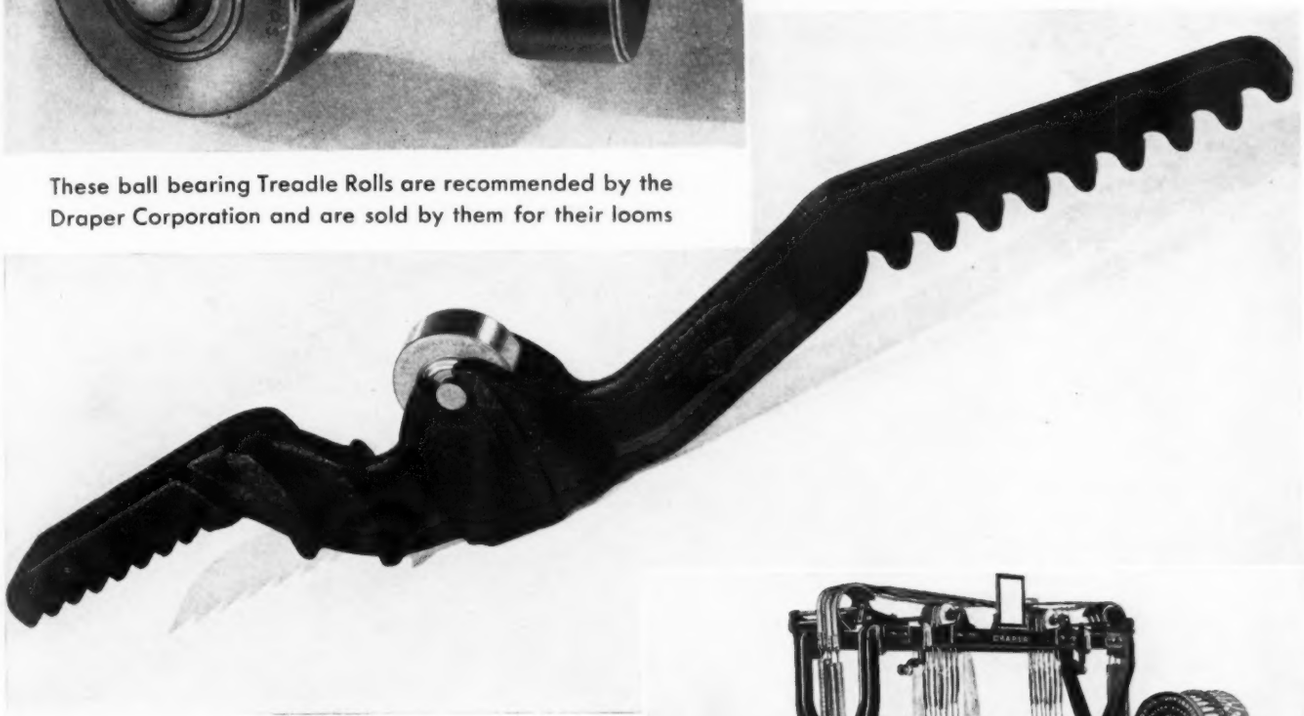
Carolina Loom Reed Co., which for the last 18 months has been located on

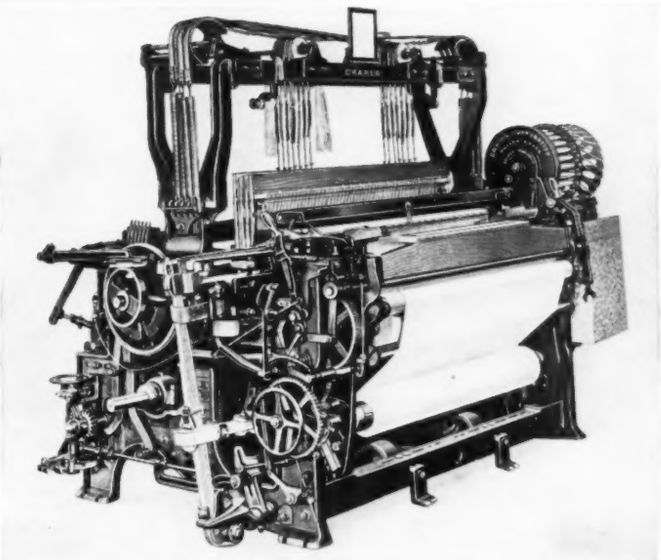


These ball bearing Treadle Rolls are recommended by the Draper Corporation and are sold by them for their looms

Good-bye

FIRE HAZARD!





DRAPER LOOMS equipped with New Departure treadle roll ball bearings are better prepared than ever for higher speeds.

● Gone is the likelihood of sparks and flashups in cam looms with Treadle Rolls.

This new ball bearing treadle roll bearing not only reduces friction, wear and maintenance cost—but the smooth, hard outer race of this bearing actually burnishes and "heals" rough surfaces on its cam, thereby eliminating sparks and fire hazards at this point.

This "new departure" by New Departure is only one of the many cost-cutting developments in bearings for the textile field.

New Departure, Division of General Motors, Bristol, Connecticut. Sales branches at Charlotte, Philadelphia, New York and Boston.

NEW DEPARTURE

PIONEER OF THE SELF-SEALED BALL BEARING

2915

THESE 19 STALWARTS made a striking test of a new, patented construction for stainless steel reels developed by Rodney Hunt Machine Co., Orange, Mass. Their dead weight produced no perceptible bending. Rodney Hunt calls this a "pipe body" construction and claims that it makes possible reels up to 30 ft. in length.

Bain Street, moved into new and larger quarters at 1000 South Elm Street, Greensboro, N. C. E. J. McFetters is general manager.

A. Dishington & Co., exporters specializing on South America, have removed their offices to new quarters at 75 West St., New York.

Firestone Rubber & Latex Products Co., Fall River, Mass., is promoting Controlastic for backing cloths in manufacture of women's shoes to give them "sculptured fit."

American Institute of Laundering, Joliet, Ill., is offering a research membership open to any organizations interested in predetermining and improving the performance of textiles.

Coppus Engineering Corp., Worcester, Mass., at the end of a six months advertising campaign, had manufacturers doing 90% of the engine and compressor business including Coppus air-filter data sheets in their sales books, as against only 4% at the beginning of the period. That 4% was the total result of a previous two years sales effort without advertising.

Textile Industry Research, Inc., New York, previously for 10 years the private firm of Herbert L. Werner, consulting engineer, is now incorporated with Mr. Werner as president. Other officers include Ernest L. Frankl, vice-president and treasurer; Samuel A. Pleasants, secretary; Aldo P. Greco, of Philadelphia, member of the board. The corporation specializes in reorganizing and modernizing spinning and weaving mills, and in developing manufacture of new fibers. Mr. Frankl was formerly for many years in the textile business in Switzerland.

Keever Starch Co., Columbus, Ohio, has appointed Claude Iler to succeed the late Daniel H. Wallace as southern manager with headquarters at Woodside Bldg., Greenville, S. C. Mr. Iler has been with Keever for 20 years.

Stodghill & Co., Atlanta, Ga., have added L. L. Watkins of Greer, S. C., to their staff. He will specialize in sales and service of sizing products. Since his graduation from Clemson College in 1936, Mr. Watkins has been connected with Startex Mills, Tucapau, S. C.

L. L. WATKINS, now with Stodghill & Co.

Manhattan Rubber Mfg. Division, Raybestos-Manhattan, Inc., Passaic, N. J., has installed one of the largest vulcanizers, measuring 15 ft. in diameter for vulcanizing rubber-lined tanks and other equipment for resistance against corrosive liquids and to prevent contamination to the processed substances.

New Departure Division of General Motors Sales Corp. has promoted Ralph O. Wirtemburg, manager of the New York office, to the main office in Bristol, Conn., as eastern sales manager, a new post. Francis B. Wasley, in charge of the Philadelphia office, was shifted to succeed Mr. Wirtemburg in New York; and Mark Goedecke, service engineer in the Bristol office, was made chief at Philadelphia.

American Cyanamid & Chemical Corp., announces that Dr. Wanda K. Farr is now connected with its research department. Previously Dr. Farr had been in charge of the cellulose research conducted at Boyce-Thompson Plant Institute, Yonkers, N. Y., under the auspices of the Chemical Foundation.

Cutler-Hammer, Inc., Milwaukee, Wis., has moved its Atlanta, Ga., office to 134 Marietta St., N.W. This office is in charge of A. C. Gibson. W. T. Roundy was recently transferred to the Atlanta office from Milwaukee, and will cover Florida, making his home at Orlando. R. Volbrecht has been transferred to Cutler-Hammer's New York merchandising sales staff, after several years connection with the Philadelphia district office and the main plant at Milwaukee.

American Viscose Corp. has set up a new exhibit at its Front Royal, Va., plant presenting the story of rayon, from the first steps of manufacture, to the finished fabric. The exhibit, including miniature productive equipment in operation, located at the entrance to the plant, is accessible to an important tourist district, and only a few miles from the entrance to the Skyline Drive.

Kennecott Wire & Cable Products, Waterbury, Conn., is now being represented in South Carolina, Georgia, Alabama and Florida by E. B. Hook with office in the Bona-Allen Building, Atlanta, Ga. Mr. Hook was formerly manager of Lockwood, Greene & Co's Atlanta branch office, and later served as sales engineer for Anaconda Wire & Cable Co. A. R. Hook, Jr., has recently been transferred from New Orleans, La., to Atlanta, where he is working under the direction of H. H. Herring, manager of the Atlanta office of Chase Brass & Copper Co., a subsidiary of Kennecott Copper Corp.

Scott & Williams, Laconia, N. H., are arranging to make certain airplane parts for Eclipse Aviation Corp., which will enable the plant to run full time. Officials report that the firm's regular line of operations will be continued without restriction.

Hercules Powder Co., Wilmington, Del., announces resignation of G. G. Rheuby, vice-president and director, from the executive committee, and the election of A. B. Nixon, director and formerly general manager of the com-

"... and sales are on the increase since we began knitting with TMW Needles."

pany's Naval Stores Department, to succeed Mr. Rheuby as vice-president and a member of the executive committee. A. E. Forster, assistant general manager, Naval Stores Department, was appointed general manager, succeeding Mr. Nixon.

Tolhurst Centrifugal Division and **DeBothezat Ventilating Equipment Division** of American Machine & Metals, Inc., East Moline, Ill., will be represented in Maryland, Virginia, and the District of Columbia, by Walter C. Davis, with headquarters in Baltimore.

Texas Co. has appointed B. D. Heath, Charlotte, N. C., as special representative on Texaco lubricants for textile industries in North Carolina.

Cowles Detergent Co., Cleveland, Ohio, will move to larger offices on Aug. 31, when the executive and general offices of the company will be located at 7016 Euclid Ave., Cleveland.

Pennsylvania Salt Mfg. Co., Philadelphia, has appointed H. M. Ellsworth as manager of advertising. He was for many years advertising manager of the Sterling Products Co., Easton, Pa. He succeeds Miss I. J. Dennery, resigned.

Medart Co., St. Louis, has purchased the entire wood pulley stock of Reeves Pulley Co. and all good will pertaining thereto. Reeves discontinued manufacturing and marketing wood split pulleys as of July 1 but of course continues its other lines. The Medart Co.

J. W. BLOCK, president of Meyer & Marks Yarn Co., Inc., who will be associated with United Factors Corp., New York, as vice-president after Sept. 15. Mr. Block was with Meyer & Marks since 1922 and president since 1936. That firm suspends business as of Sept. 15. Maurice E. Bretzfield, now vice-president and director of United Factors Corp., will become executive vice-president.

will continue to serve all of the wood pulley dealers and customers of Reeves as well as Medart dealers and customers.

Arnold Rosenthal, 41 West 72nd St., New York, director of the Textile Academy, is now organizing his fall evening class in textiles. Period of instruction is 16 weeks, Monday and Wednesday evenings, beginning Sept. 23.

E. L. Luaces has established an office at 1107 Broadway, New York, to engage in patent practice in the fields of chemistry, metallurgy and engineering, in which fields he has been active during the last 16 years.

International Business Machines Corp., Endicott, N. Y., has let contracts for an addition to its main plant to house machine shop, tool room and punch press departments. Present machine shop space will be used for the expansion of other departments.

Mathieson Alkali Works, Inc., announces that it has recently started construction of an addition to its electro-chemical plant at Niagara Falls, N. Y., for the production of sodium chlorite. This material was introduced on a small scale about a year ago for bleaching cotton, rayon, and other materials. Large-scale production will be started next spring.

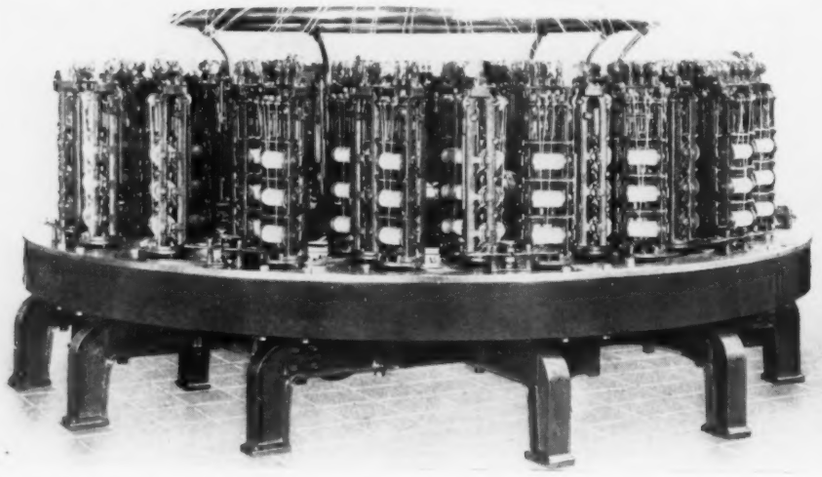
Monsanto Chemical Co. has begun work on engineering plans preparatory to construction in the Detroit industrial area of a manufacturing plant for the production of such chemicals as disodium phosphate, trisodium phosphate and tetrasodium pyrophosphate. A tract of 138 acres has been purchased, located 15 miles southwest of Detroit, near the business district of Trenton, with frontage on the Detroit river. The plant will be Monsanto's eighteenth and the fourth in the phosphate division of the company. R. R. Cole, of Anniston, Ala., is general manager of the division.

Westinghouse Electric & Mfg. Co. reports that orders for the 12 months ended June 30, 1940, were the highest for any twelve months in the history of the company. They totaled $245,256,874 compared with $177,487,833 for the same period a year previous, an increase of 38%. Net income for the 12 months was $17,352,590, compared with $10,890,958 for year previous, an increase of 59%.

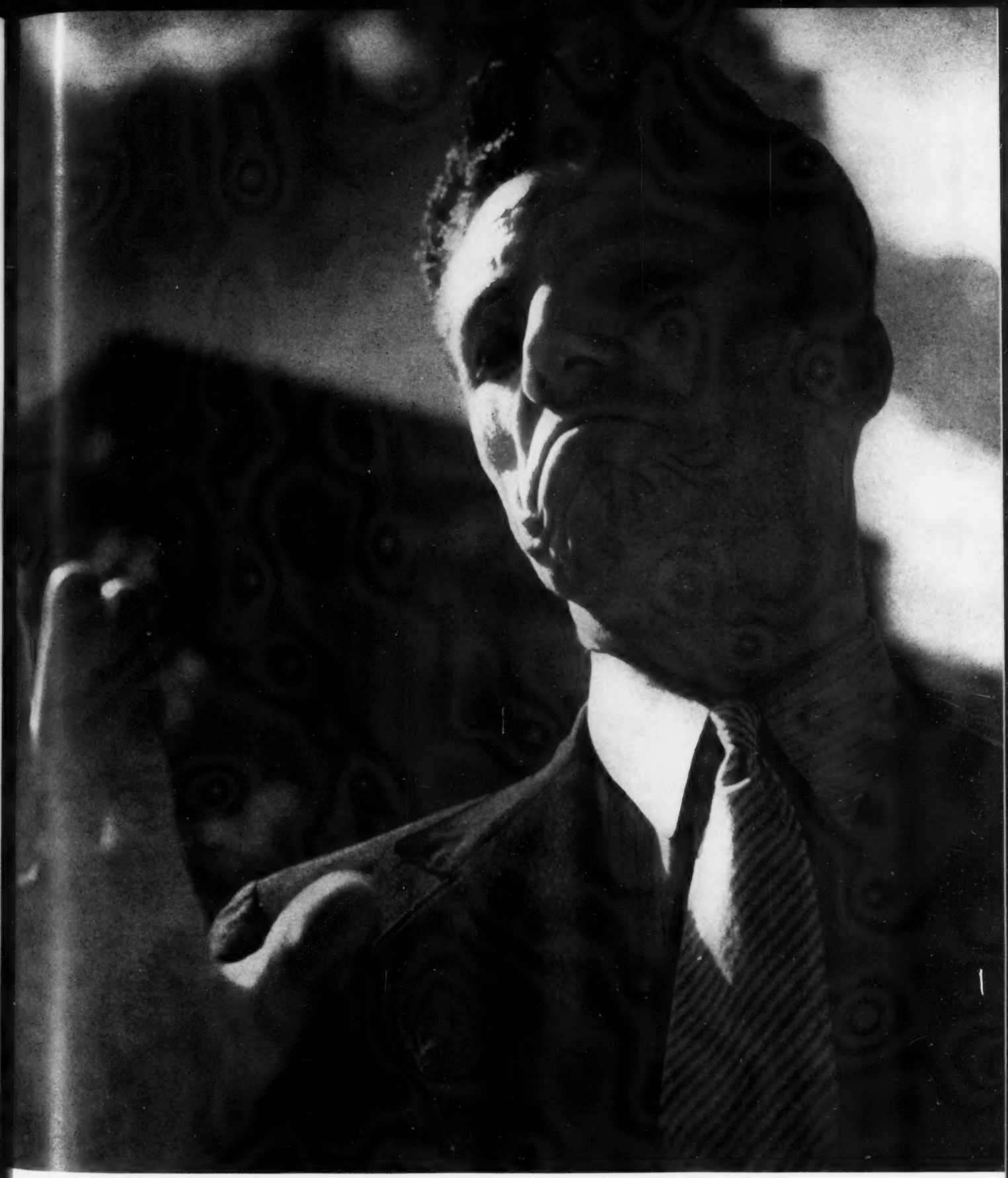
Celotex Corp., Chicago, has named Donald J. Carmouche of Charlotte, N. C., to take charge of textile sales and research in the southern States.

Albert Kahn, Inc., architects and engineers, Detroit, Mich., has been succeeded by a new corporation to be known as Albert Kahn Associated Architects and Engineers, Inc., in which various members of the organization will be shareholders. The new company will be headed by Albert and Louis Kahn. The move is undertaken as a form of profit-sharing with those who have worked with the founders of the business for upward of 25 years.

Bakelite Corp. and **Halowax Corp.** have moved their offices from 247 Park Ave., New York, to 30 East 42nd St., New York.



LARGEST EVER BUILT by the Textile Machine Works, Reading, Pa., in its 48 years of building all sorts of braiders, is this Hercules braiding machine which weighs 35 tons, is 16 ft. 4 in. in diameter, and 8 ft. 3 in. in height. It has 60 carriers with three horizontal bobbins to each carrier. Each bobbin holds 15 lb. of steel cable (1000 ft.) which runs the machine for one hour. The product is the new hydraulic mining cartridge which is being used as substitute for explosives in coal mining. The cartridge is a heavy rubber tube encased in metal braid. The latter expands with the rubber when pressure is applied but locks at a certain maximum thus preventing the bursting of the rubber tube.



"There is none so blind as he who wilfully shuts his eyes"
ARABIAN PROVERB

In a 40-hour week the new READING high-production twenty-six section forty-five gauge full-fashioned knitting machine produces 97 per cent more volume and 116 per cent more value than the ordinary twenty-section forty-two gauge machine . . . *And remember: Money invested in modern machinery not only pays big dividends of itself but also serves as insurance for your total investment.*

TEXTILE MACHINE WORKS • READING, PA.

FREE FOR THE ASKING

Readers interested in literature reviewed on this page may secure copies by writing to Textile World, 330 West 42nd St., New York, giving their company connection, title of item desired, and date of issue in which it was reviewed.

Woolen Machinery. Davis & Furber Machine Co. July issue of *Davis & Furber News* points out why cost of operating old machinery is going up, and advantages which can be obtained through installation of new equipment.

Steel. Republic Steel Corp. Booklet tells in words and pictures characteristics and uses of corrosion and heat-resisting steels, types HCN, NC-3 and HC; included is a chart showing characteristics of all stainless-steel types produced by this company.

Speed Reducers and Increasers. Foote Bros. Gear & Machine Corp. 14-page bulletin, No. 104, deals with low-ratio speed increasers and reducers; gives data governing their correct selection, design features, and dimensions.

Conveyor - Elevators. Stephens-Adamson Mfg. Co. Catalog No. 140 contains 64 pages of data on various types of conveyors and elevators; included are 20 pages of installation illustrations.

Belting. Graton & Knight Co. Catalog gives details on many types of belting; has information arranged in concise, logical order; gives data on which belting to select for specific use.

Water Treatment. Permutit Co. Bulletin 2345 contains four pages of descriptions and pictures of new oscillating type dry chemical feeder. Describes operating principles, lists advantages, and gives data on specifications.

Drainage. Cochrane Corp. Publication 2935 covers high-capacity, high-pressure discharger designed to handle large quantities of condensate or carryover at relatively high pressures.

Cloth Washing. Philadelphia Quartz Co. Vol. 20, No. 8 of *Silicate P's & Q's* discusses influence upon the whiteness of fabrics of silicate in washing solutions.

Instruments. Foxboro Co. 4-page folder gives condensed story of instrument uses in a variety of plants; a number of textile mills are mentioned.

V-Belt Drives. Allis-Chalmers Mfg. Co. Bulletin B6051A gives data on characteristics and advantages of multiple V-belt drives; included are numerous installation photographs and a 6-page section of engineering information.

Fluorescent Lighting. Day-Brite Lighting, Inc. Catalog No. 112 describes complete line of fluorescent lighting fixtures; includes photographs showing uses, as well as pictures of the lighting units themselves; also specification and price data.

Chemical Products. Solvay Sales Corp. Illustrated booklet gives complete information on all chemical products manufactured by this company; outlines uses to which they are applicable.

Nickel. International Nickel Co., Inc. Summer edition of *Inco* contains articles on uses of nickel and nickel alloys; lead article deals with the part nickel plays in manufacture of rayon.

Lubrication. Farval Corp. Small centralized system of lubrication, for distribution of oil or grease to bearings on smaller machines, is described in Bulletin 10-A, which includes illustrative photographs and diagrams.

Materials Handling Equipment. Cleveland Tramrail Div. of Cleveland Crane & Engineering Co. 12-page pictorial booklet, No. 2004-A, tells how to determine where overhead materials handling equipment can be used profitably.

Geared Drives. Westinghouse Electric & Mfg. Co., Gearing Div. 24-page illustrated booklet describes complete line of Type SU speed increasers designed to supply output speeds in excess of those which can be obtained directly with economy and safety from ordinary prime movers.

Deaerators. Cochrane Corp. Application of deaerators to the Front Royal plant of American Viscose Corp. is described in Data Sheet 2913, which includes photographs of the plant and of this equipment, as well as a list of other rayon plant deaerating heater installations.

Steel Stock. Joseph T. Ryerson & Son, Inc. 256-page stock list gives data on various types and sizes of steel products carried in stock, as well as information on specifications, properties, and other factors.

Leather Belting. E. F. Houghton & Co. July issue of *Research Illustrated* contains article on testing of leather, and points out advantages of company's products.

Chemicals. Glyco Products Co., Inc. Spanish-language edition of "Chemicals By Glyco" describes a variety of products, including emulsifying agents, flameproofing materials, synthetic waxes and resins, etc.

Machine Parts. Boston Gear Works, Inc. Illustrated booklet gives data on machine parts carried in stock; covered are crown face, V groove, and cone V groove pulleys, shaft supports, and couplings.

Materials Handling. Industrial Truck Statistical Association. Material Handling Handbook gives data on analyzing handling problems and operations and their correlation with production, storekeeping and related functions, as well as data on planning of materials handling systems.

Vari-Pitch Drives. Allis-Chalmers Mfg. Co. July issue of *Texrope Topics* contains 2-page picture story of manufacture of covered-rubber yarns by Dardington Fabric Corp.

Water Softeners. Permutit Co. Hot-process water softeners are described in Bulletin No. 2341, which contains 32 pages of photographs, diagrams and text explaining this equipment and its uses.

Finish - Coat Materials. Artstone Rocor Corp. Catalog gives data on a variety of cement paint and colored finish-coat materials; included are photographs showing use of specific products, and descriptions of conditions for which each is recommended.

Multi - V - Drive Manual. Worthington Pump & Machinery Corp. Manual gives data on power transmission through V-belts; gives formula and method for selecting drives and precautions which should be observed to get best results from such equipment.

Floor - Surfacing Compound. Flexrock Co. Leaflet describes resurfacing compound for over-all use on industrial floors or repair of floor breaks; a series of photographs shows step-by-step methods of making repairs.

Bearings. Bound Brook Oil-Less Bearing Co. Stock List No. 1 gives data on oil-retaining porous bronze bearings carried in stock; diameters, lengths and prices in various quantities are included.

Piping. American Locomotive Co., Alco Products Div. Pre-fabricated piping of carbon steel, alloy steel and nonferrous metals is pictured and described and its advantages listed in a 4-page folder, No. 1022.

Cleaning Compound. Magnus Chemical Co. Series of detailed performance reports from buildings of all kinds on operations such as cleaning floors, walls, glass, woodwork, furniture, lavatories, etc.

Electrical Instruments. Roller-Smith Co. Catalog 4120 illustrates and describes round and square panel instruments in 3- and 4-in. sizes, covered are ammeters, voltmeters, wattmeters, milliammeters, etc.

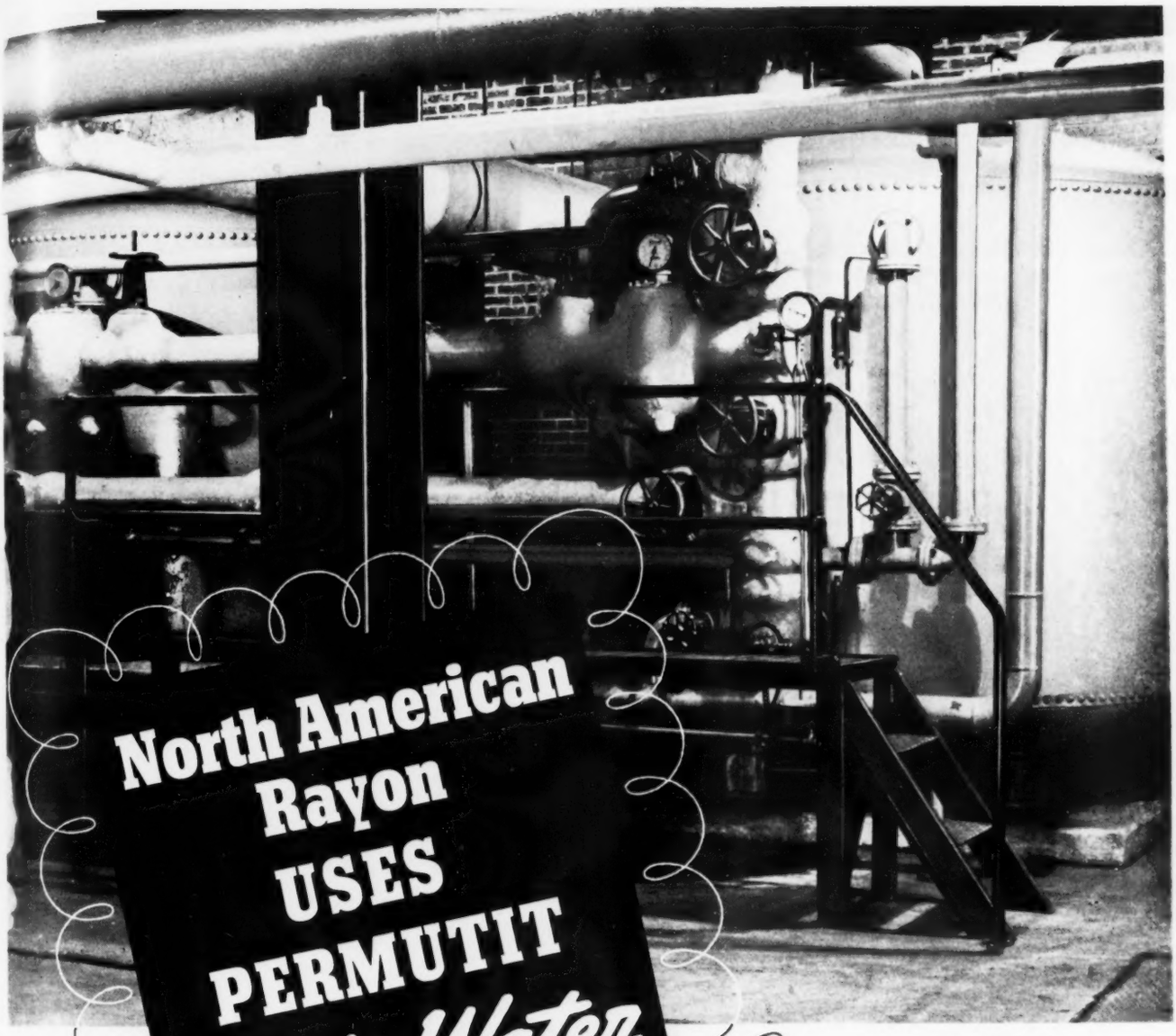
Steel Valves. Hancock Valve Div. of Manning, Maxwell & Moore, Inc. Steel valves in various types and for a number of services are described and pictured in 40-page Bulletin 5-7000; data on design, uses, weights and list prices are included.

Stainless Steel. Republic Steel Corp. Illustrated 28-page booklet describes stainless and heat-resisting steels; contains data on typical uses, methods of fabrication, properties, corrosion resistance, etc.; 36 uses for these metals in textile mills are mentioned.

Recording Voltmeters. Bristol Co. Bulletin 555 describes portable recording voltmeters and ammeters; features making these recorders moisture proof and rugged are emphasized.

Ball Bearings. New Departure Division, General Motors Sales Corp. Leaflet describes vertical tension pulley bearing designed for vertical mounting of idler or tension pulleys; emphasized is design feature which assures lubrication regardless of pulley speed.

Detergents and Lubricants. E. F. Houghton & Co. June–July, 1940, issue of *Houghton Line* contains, in addition to other material, articles on detergents and oils produced by this company.



North American Rayon USES PERMUTIT *Soft Water*

Some of the Permutit Zeolite Water Softeners installed at North American Rayon Co., Elizabethton, Tenn.

SINCE 1932, North American Rayon Co. has protected quality by softening process water the Permutit way. Their statement that Permutit equipment is "very satisfactory" is backed by the fact that additional Permutit units have been ordered again and again to increase capacity.

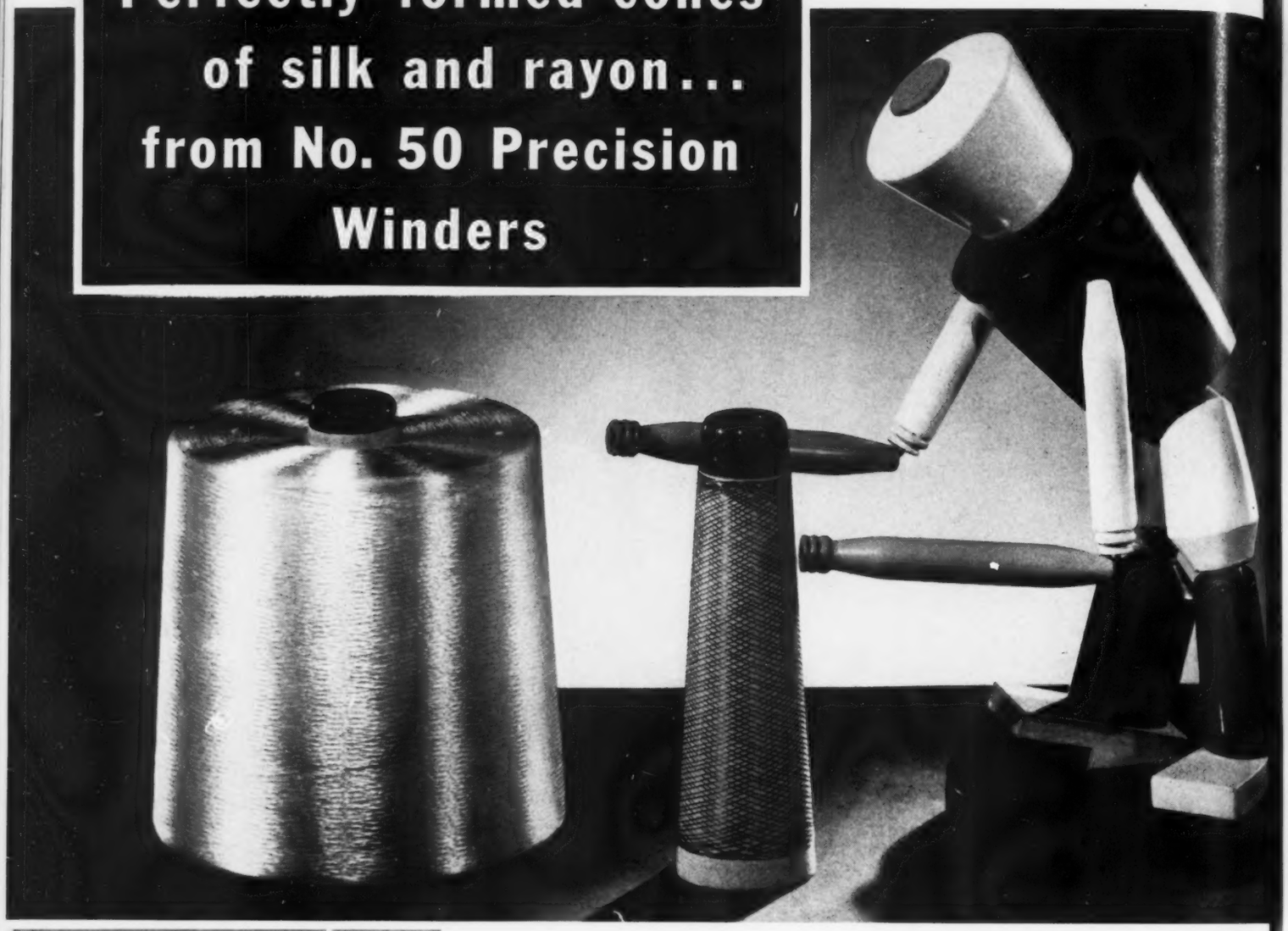
GET THIS FREE BOOKLET. A new booklet on Permutit equipment for the Textile industry is yours for the asking. Tells how Permutit can condition a hard, chocolate-colored water so as to make it soft and clear. Helps you estimate how much you can save by scouring, dyeing, bleaching *any* fabric in completely soft water. Water analysis free—shipping container for water sample sent on request. Address The Permutit Company, Dept. B, 330 West 42nd St., New York.

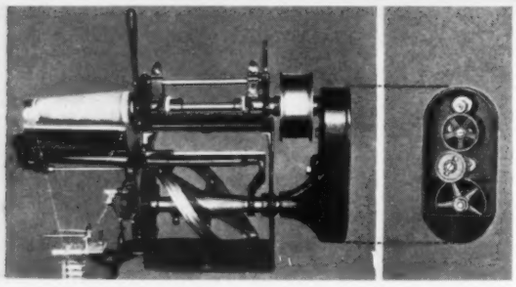
"PERMUTIT"*

WATER CONDITIONING *Headquarters*

*Trademark Reg. U. S. Pat. Off.

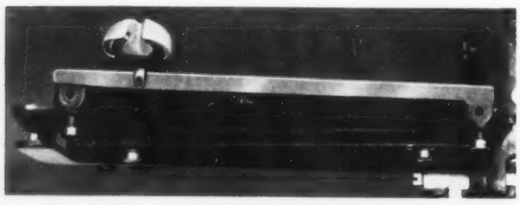
Perfectly-formed cones of silk and rayon... from No. 50 Precision Winders



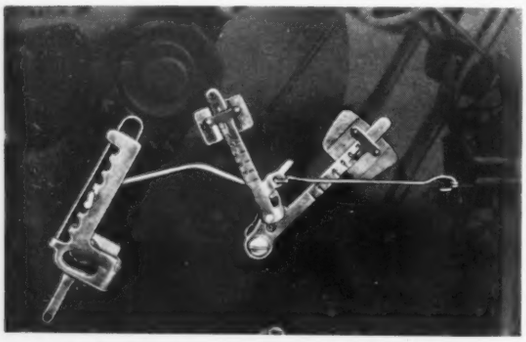


An accurate and constant relationship between spindle speed and cam speed is maintained by the Gear Gain Attachment, insuring proper lay of yarn on Universal Cones.

Precision winding means absolute control of the yarn from beginni end of winding package. Silk and rayon, which must be carefully ha require a winder designed for precision adjustments and manufactu precision standards — the No. 50 Winder.



The top edge of the Traverse Fi Back is very carefully finished to vide a precision fit with the Th Guide Holder lip, producing be precise-wound Universal Cones.



As the winding package increases in diameter, tension and pressure are reduced, by Differential Tension and Pressure Levers, to produce large packages that are perfectly formed.

These are only a few of the reasons why the world's leading silk and rayon manufacturers, almost without exception, select No. 50 Winders. Year in and year out, more than 90% of the entire world's production of coned silk and rayon is on Universal Cones.

UNIVERSAL WINDING COMPANY, Providence, Rhode Islan

THE OVERSEERS' CORNER

PHOTOGRAPHING GRUESOME ACCIDENTS

A Pete & Bill Discussion

Bill paused to peek over Pete's shoulder as the latter was busily engaged in tacking something on the bulletin board in his department.

"Ugh," said Bill disgustedly. "What in the name of all that's holy are those awful pictures you're putting on the board?"

"Oh those!" said Pete turning around. "Why the picture on the left is a mangled hand of one of the men who carelessly caught it in a machine. The picture on the right is a reconstruction of how the accident occurred. I saw a story in the July issue of TEXTILE WORLD where posting such pictures has materially improved the accident record at Pepperell Mfg. Co.'s Lindale, Ga., plant. That gave me the idea."

"Those pictures are the most gruesome, nauseating things I have ever seen," said Bill. "With all the slaughter going on in Europe I don't see why you have to put up such pictures on your bulletin board. I should think they would do far more harm than good. I'd hush up such an accident."

"Oh no, that's where you're wrong!" replied Pete. "It's true that these pictures are blood-chilling to look at, but you'd be surprised how effective they are. Everybody in here knows that this hand belongs to John Jones, and it's making the workers more careful. They don't want an injury like it."

". . . busily engaged in tacking something on the bulletin board."

"I should think John Jones would hesitate to have such a photograph put up for the world to see," continued Bill. "It's bad enough to have an injury like that—without displaying it before the whole community."

"That's where you're wrong again," commented Pete. "John not only gave me permission to make this picture, but he said he thought it was a splendid idea. It might help someone else from making the same mistake he made. I'm going to put up pictures like this every time an accident occurs in my department."

Is it good psychology to post gruesome photographs of injuries received in the mill?

Letters From Readers

Requisites of a Boss Woolen Carder and Spinner

Editor, Overseers' Corner:

A boss carder and spinner, to start with, should work through the card room as a hand and helper long enough to thoroughly understand all working parts of the machines. Then he should study very carefully all the different changes that have to be made from one size yarn or cut to another so as to know his stock. The machines must be carefully adjusted, timed and speeded for the stock in process. Each size yarn, cut or run, requires a different adjustment from that previously run in order to get the best results.

He should have full supervision over the help and cooperation of the second-hand and mechanic in making all the machine changes from one size yarn to another.

He should know his cards and mules well enough to make all necessary changes without any lost time. Experimenting is too expensive to be constituted in a day's work. All experiments should be worked out when stock is bought and samples made; or better still have a sample card for that purpose so when the blend is sent to the card room it will go through without a cut-off or remix.

When all work is done in this manner throughout the department the room should be satisfactory and profitable for both the firm and overseer.

THOMAS A. GRAY, *Overseer*
Carding and Spinning
Tennessee

Bill Blows Up

"Ridiculing Mistakes"
Pete & Bill, May, 1940

Editor, Overseers' Corner:

Oh boy! Did Bill fly off the handle and nearly burst a vein just because that dumb Smith boy ruined a measley 1,000 yd. of goods by starting up a machine that had been stopped for repairs? And then the dumb kid was to be ridiculed and made an example. Who was it that stopped or ordered the machine stopped for repairs without seeing that it was cleared of goods, or that the source of power was put out of commission so as to prevent or forestall the possibility of any boy, dumb or otherwise, pulling such a trick

CONTRIBUTIONS to the letters and practical helps in "The Overseers' Corner" are paid for when published without regard to length. We use letters (not over 200 words) discussing the material on this page or any other pertinent matter whether of mechanical, managerial or just plain human interest. Those who contribute practical helps or kinks which are published (not over 500 words) will be paid additional for an appropriate sketch to illustrate their device. It is not necessary to submit finished drawings. Contributions of greater than specified length may be given consideration as articles. If these pages interest you —contribute something to them to interest others. Address Editor, Overseers' Corner, Textile World, 330 West 42d St., New York.

as starting it up. The characteristic that would prompt a foreman to show up a so-called dumb Daniel or Dora and "make an example" of him or her is usually accompanied by the characteristic that prompts a foreman to shift responsibility—to pass the buck. Things that a foreman of any department should anticipate are the mistakes and even willful deviltries that are apt to occur in his department. Then, when someone pulls a boner or maliciously puts something over, chalk up one against himself and study effective means for preventing its ever happening again. The foreman who shames or subjects a bonehead to ridicule simply advertises his own lack of leadership.

J. F. CAHILL
(Atlanta, Ga.)

Stark Mills Wins Safety Cup Permanently

Editor, Overseers' Corner:

Thank you for publishing recently a picture showing our safety sign outside Stark Mills. I appreciate the favorable publicity and the reference to the fine safety record of our Stark Mills. In this connection it may be of interest that our mills conduct a safety contest every half year. At the end of last year Stark Mills had won permanent possession of the first General Manager's Safety Cup by winning the contest three times in a close competition after both our Winnsboro and Shelbyville Mills had each won two contests giving each of them two legs on the cup. A new cup was started in competition during the first half of 1940, and Stark won the first leg on this cup with a record of one lost-time accident in 944,061 hrs. Our Fisk Cord Mills at New Bedford is joining the other three mills in the contest which started July 1. This is just one of many methods used in our organization for adding stimulation to the very effective safety work carried on by the safety committee in each plant.

Yours very truly,
H. GORDON SMITH, *General Manager*
Tire Cord Mills
United States Rubber Co.
Hogansville, Ga.

Inspections by Fixer

Editor, Overseers' Corner:

A fixer should get in the habit of making regular inspections. Whenever he has a spare moment, instead of merely resting he should make a tour of his looms, inspecting a certain part or motion.

Most fixers make it a practice, as soon as they don their overalls, of making a tour between the breasts and another between the beams. The former is for rough or uneven cloth or other defects in the cloth, and the latter for warp tension ropes inspection. Where there are box looms, the fixer can also make a tour to look at boxes and shuttles.

If a fixer sees a certain nut or setscrew loose on one loom, the chances are that the same nut or setscrew is loose on several other looms as these things seem to run in epidemics. Therefore, he should make it a point to inspect that part on all his looms at the earliest opportunity.

During spare moments loomfixers can check for rough and uneven cloth, edges, ropes, harness, bobbin cans (automatic looms), heads, brakes, etc. Remember, in checking, check one thing at a time on each loom, missing none.

The writer uses a regular method such as this and avoids many needless and costly breakdowns thereby.

—C. S. B. *(Pa.)*

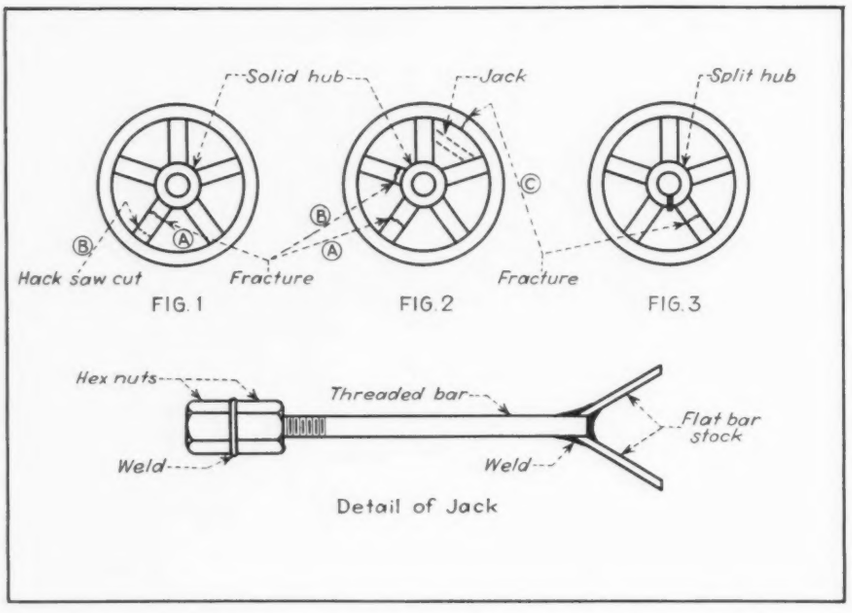
Overseers' Practical Helps

Take 'Em Off the Supply Bill

Worn out picker sticks, plus a few small bolts, can practically eliminate the purchasing of whip-roll vibrator arms and cams. Drill a couple of holes through the vibrator arm and bolt a short length of pickerstick to the face side, as shown in the illustration. The hard wood does not wear the cam and, in turn, offers surprising resistance to wear upon itself. The one pictured has run for five years and appears to be good for many more.

Picker-stick facing for vibrator arm

J. C. NORMAN *(Alabama)*



Proper procedure often can eliminate preheating in welding cast iron gears and pulleys

Repairing Cast Iron Pulleys and Gears

In repairing fractured cast-iron pulleys or gears, expansion and contraction stresses must be controlled during and immediately after welding. This is usually accomplished by careful preheating, postheating, and controlled cooling, but such practices are sometimes impossible. The procedures described here have been abstracted from a recent issue of *Oxy-Acetylene Tips*, and are said to have been used successfully for bronze-welding and fusion welding of fractures in cast-iron pulleys and gears without preheating.

When a single spoke is fractured near the hub of a pulley, Fig. 1, first V the fracture from both sides by chip-

ping. Then, at a point close to the rim, make hacksaw cuts from both broad sides of the spoke, leaving a strip of uncut metal about ¼ in. thick through the center. The additional opening provided by the cuts permits expansion, and the uncut section keeps the spoke in line without special preheating.

When fracture has cooled to room temperature, weld the hacksaw cuts closed, after V'ing.

When a combination of rim and spoke fracture exists, Fig. 2, the order of welding is important. After V'ing the fractures, complete welds *A* and *B* in that order. *B* should not be attempted until *A* has completely cooled. When *B* has cooled, place a jack, such as is shown in the sketch, between the spokes on either side of the rim fracture and adjust it to force the fracture open approximately 1/16 in. This clearance permits normal expansion of the rim during welding of *C*. After completing this final weld, remove the jack and allow the weld to cool.

With gears or pulleys of the split-hub type, a spoke broken adjacent to the hub (Fig. 3) is prepared for welding by V'ing in the usual manner. Then, insert a shaft about 1/16 in. smaller in diameter than the bore of the hub and tighten bolts until hub fits tightly around shaft. Thus the fracture will be opened sufficiently to take care of expansion. After welding, release pressure by removing the bolts.

Red Snell's Personalized Posters

Have reduced accident frequency and cloth seconds 50% in Georgia mill

SOMETIME AGO one of the workers in a large Georgia mill was working on overhead shafting in one of the rooms. Instead of climbing down the ladder after completing his job, he swung down to the floor on the belting. Fortunately, he made a safe landing and no harm was done. When the superintendent heard about the aerial acrobatics he decided that something more than an ordinary reprimand was necessary. The mill had always stressed safety, and the bulletin boards continuously carried ordinary safety posters. But this man had pulled a completely foolish stunt in the face of all these warnings. May-

BILL JONES DOES THE TARZAN ACT!
W. K. SNELL
YOU MAY BE A GOOD PROVIDER BUT YOU CAN'T SUPPORT YOURSELF ON A BROKEN LADDER!
QUALITY
SAFETY
STEADY PAY
IT'S THOSE LITTLE SLIPS THAT HURT MOST! and LITTLE DEFECTS THAT CAUSES SECONDS
PICK OUTS CAUSED 6% OF SECONDS THIS WEEK
IF EVERY BODY IN THIS SHOP WOULD DO THIS IT WOULD.....
I resolve to do everything in my power to produce Quality during 1940!
A Quality Worker
STOP DEFECTS
SLASHER DAMAGE caused 10% of Seconds last week
TAKE OFF
to
SET NEW QUALITY RECORDS FOR 1940
OIL caused 15% of Seconds Last week

Representative samples of Red Snell's posters which appear regularly on the bulletin board of a southern mill

be "canned" warnings, thought the superintendent, lost their effectiveness after the novelty wore off. Finally, some one hit on the idea of personalizing these warnings.

There was a young man named Red Snell in one of the departments who had exhibited some talent as an artist. The superintendent, overseer and Red went into a huddle. A day later there was a new poster on the bulletin board. Every one in the mill saw it and commented. There was much chuckling among the employees. The poster was a recognizable sketch of the employee whom we shall call Bill Jones (because that isn't his name) "doing a Tarzan act from the shafting." Bill Jones' face was red for several days, but he took the kidding good-naturedly and has never since swung from the shafting like the famous jungle character of Edgar Rice Burroughs. Soon humorous cartoons depicting other "boners" began to appear on the board. Coincidentally, the safety record of the mill began to show marked improvement. No one wanted to be seen doing something foolish that Red Snell might poke fun at.

The personalized bulletins were so successful in reducing accident frequency that they were extended to other phases of mill operation. For example, tobacco chewers were kidded into hitting the cuspidor more often than the floor or walls. Then one day at an overseers' meeting a complaint was registered that too much black oil was getting into the cloth. One of the overseers remarked, "We ought to get Red Snell on this." The superintendent perked up his ears, "An excellent idea! We'll do just that," he said.

So Red Snell was called in and asked about posters on the subjects of seconds. Result was some of the posters reproduced herewith. An actual sample of bad cloth and the reason for it was attached to the bottom of each poster, along with the percentage of total seconds which resulted from this particular trouble. It was not long before the seconds situation began to improve. "Maybe this just happened," thought the superintendent, "I'll test these posters." So he stopped using them for a while. Seconds began to increase throughout the mill. Then he started the posters again, and the total yardage of seconds began to drop. The same test was tried in connection with the safety posters, and it was learned that lost-time man-hours decreased with use of the posters and increased without them. The superintendent then was fully convinced. He intends to use these personalized posters in his mill as long as they have such a direct bearing on safety and quality.

Red Snell's fame as an artist has spread even beyond the confines of the mill. Recently some of the mill executives asked him to draw a poster caricaturing certain friends who block the golf course every week-end. It is reported with great satisfaction that the fairways have been open ever since this poster appeared in the locker room at the country club.

Cold Method of Bleaching

Prevents bleeding and fading of dyes in colored-yarn fabrics

By A. DURFEE DAMON

A DIFFICULTY frequently encountered in bleaching colored-yarn handkerchief fabrics is bleeding or fading of the colors. This is particularly true of reds, maroons, wines, and certain violets, browns, and tans. The bleeding is directly traceable to the high temperatures commonly employed in bleaching these fabrics. Accordingly, efforts were made to develop a cold bleaching method for bleaching handkerchief fabrics which could be used on all colors without danger of bleeding or fading. After considerable experimentation, the process described below was adopted.

In the new cold method, chemic (sodium hypochlorite) is employed as the bleaching medium. The equipment used is the ordinary dolly washer, or similar equipment. Chemical costs are comparatively low and, by the use of several dolly washers, the yardage output may be maintained at a fairly high figure.

Previous to the actual bleaching, the goods are singed, both sides, and passed through a solution of a desizing enzyme as they issue from the singer. A solution containing 1 to 2% strength by volume of the desizing agent, applied at 120° F., has been found satisfactory for this purpose. It is essential that the enzyme used be one which can be applied at a low temperature and still solublize the gray sizing in the cloth.

After saturation with the desizing solution, the goods are plaited into box trucks and allowed to lie for at least 4 hr. This layover period may be as long as overnight without any harm occurring. At the end of the layover period, the goods are loaded into a dolly washer in rope form.

When the goods are completely loaded in the washer, they are given a rinse in lukewarm water followed by a rinse in cold water and are then ready for the chemic treatment. In order to minimize any effect strong chemic might have on the colors, the chemic is applied in two low-strength treatments. In the first of these treatments, the goods are run for 1 hr. in a chemic solution at a strength of 1° Tw. At the end of this time, the chemic solution is drained from the washer and the goods are given two short, cold-water rinses. The strength of the second chemic solution is dependent largely on the results obtained by the first chemic treatment. In quite a number of instances it will be found at the completion of the first chemic treatment and cold-water rinses that the goods have been bleached sufficiently and all motes have been removed. In such cases as these, the second bleaching treatment is not necessary and can be omitted.

However, if the goods are found still to contain motes and are not bleached sufficiently, the second chemic treatment is applied. The strength of the chemic solution used in this treatment should be ½ to ¾° Tw., and the time should be ½ hr., or possibly a little longer. Close observance of the goods themselves will determine when bleaching is complete. At the completion of the bleach, the chemic is drained from the washer and the goods are given two very short cold-water rinses and are then ready for the antichlor treatment.

Sodium bisulphite is satisfactory as an antichlor for these colored-yarn goods; 5 lb. of bisulphite to about 100 gal. of water in each washer is a sufficient quantity. The goods are run in the antichlor solution for 10 to 15 min. and then rinsed thoroughly with cold water. This completes the bleaching operations, and the goods are unloaded from the machines and given the usual drying and finishing processes.

This cold method of bleaching has been used with excellent results by one of the larger bleacheries in the East. Adoption of the process eliminated tinted-ground troubles and left all colors bright and unfaded.

A Florida Vacation for $4

Avondale Mills offers its people eight-day trips to Camp Helen

BY J. C. NORMAN

IMPOSSIBLE! NOT AT ALL. When vacationing is put on a mass production basis, costs take a nose dive—an 8-day vacation for $4!

Knowing the value of rest and recreation, the Avondale Mills own and operate several camps for the benefit of the whole organization, from president to sweeper and all members of their households.

Largest is Camp Helen, a well-equipped and carefully supervised beach resort near Panama City, Fla. The charge per person is approximately 50c a day. This sum covers transportation, meals, lodging, fishing and sightseeing trips.

When school's out, the fun begins.

First to go down are school personnel, mill officials and office help. Next the school children. Upon their return, it's "Come on in, folks, the water's fine!"

At frequent intervals notices are posted telling when a bus will be leaving, the length of stay and the price. If one wishes, he may organize his own group. Get up a load and a bus is yours.

Though it's hardly daybreak and the 4:30 a.m. whistle has just blown, a group of men, women and tots down to kindergarten age are standing in front of Beverly Hall. Suitcases and handbags line the curb. A bus rounds the corner. Baggage is placed atop, the group finds seats inside, and they're off for Camp Helen. Camp is reached at twilight and there's food and a swim before lights out at 10 p. m.

Next daybreak finds the camp astir. There's folks from all the mills (high officials are often along) and as they congregate about the mess hall it's a case of "Hail, hail, the gang's all here." Bacon, eggs, grits, coffee—and plenty for all—then the crowd breaks into groups. Some go fishing, others swimming, some sightseeing. Others take the kids and gather shells along the beach. There's something of interest for all. During the heat of the day one must stay under shelter, and there's time for dominoes, checkers or a penny-ante game.

Dusk brings in the deep-sea fishermen, too hungry even to swap lies until they've visited the mess hall. A dip in the surf, a dance in the recreation building, then comes 10 p.m. again and a blackout. Another dawn, and the program is repeated.

It's all great fun—for awhile. But a chap is sorter glad when his bus pulls out for home. Monday morning finds him back on the job—full of pep and eager to give it all he's got.

1. The loaded bus about to leave Sylacauga for Camp Helen. 2. At the camp—classes in art, needlework, basketry, etc. 3. Fisherman's luck—the day's catch from far out at sea. 3A. While the youngsters fish from the dock. 4. "Go fishin'? Not us, Mister. We're stickin' close to the eats!" 5, 6 & 7—Surf bathing, strolling on the beach, sports such as archery are thoroughly enjoyed. 8. And a good time was had by all.

QUESTIONS & ANSWERS

Stripes in Ratine

Technical Editor:

We are sending you a piece of fabric knitted from an all-rayon ratine yarn. You will notice there are vertical stripes appearing intermittently throughout this material. We are desirous of knowing the cause of this —whether to attribute it to dyeing, the rayon, or the knitting itself. (8734)

We are unable to detect any vertical stripes but note many horizontal stripes. They recur at regular intervals and are identified with one or two of the cones feeding the knitting machine. The dyeing of the ratiné yarn in skeins is as good as one can reasonably expect, yet there is a slight lack of complete penetration of the fancy or wrapper yarn which encircles the core.

The yarn was wound from S- and Z-twist into an S-twist ratiné. This doubled the twist of the core and almost untwisted the wrapper. When the fabric was knit, there was certainly a slight difference in the tension of one or two of the yarns, which is a difficult matter to adjust exactly. These yarns tended to open still further and expose the interior, which was slightly paler in color than the exterior. The recurrence of the light streaks gives the goods the appearance noted.

Use of Drop Wires

Technical Editor:

Is it customary to put drop wires on 8-shaft acetate satins containing about 270 to 320 ends per inch of 75-denier yarn? If so, how many banks should we use? (8725)

Some mills which have the best of equipment and are running a small loom load, say four to six looms per weaver, with properly sized warps, are able to obtain good results without drop wires. Nevertheless, we believe that it is advisable to use them. Do not have less than six banks, preferably eight. Wires should be dropped on the barks "skip"; that is, 1-3-5-7 and 2-4-6-8.

Reed Chart for Narrow Fabrics

Technical Editor:

I have recently been reading the TEXTILE WORLD YEARBOOK AND CATALOG and notice that the Reed Chart (G2) given is for the broad trade only. As I am in the narrow trade, I would be interested to know if there is a chart for this side. (8720)

We know of no such chart applicable to the narrow-fabric branch of the textile industry. The reason for this is probably that such a small percentage of narrow webs are made of plain weave or simple weaves. Another reason may be that most plain-weave narrow goods are very easily controlled in width by weighting or filling tensions. And if a change in reed has to be made it is a very simple matter. You probably realize that a reed suitable for plain goods or a single ply fabric; that is, one thickness, would not apply even in a narrow range of yarn numbers—for instance, a 24 dent reed would not be equally suitable for a 10/2 yarn and a 40/2 yarn. Likewise, any given reed probably would not be suitable for a medium-grade single ply fabric and a heavy 4-ply fabric.

Emulsions for Wool

Technical Editor:

We have been informed that if we use an emulsifying agent for mixing lard oil with water before its application to wool, considerable oil can be saved. We seem unable to get any definite information on this point and wonder if you can tell us anything about it. The people who make these emulsifying agents claim that there is at least a 10% saving in oil, besides which the wool is more evenly penetrated. (8675)

In order to get a good emulsion an emulsifying agent is essential, because water and lard oil (or any other oil) do not mix well without such an agent. A good emulsion, properly applied to the stock, is a big help in carding, spinning, and later processes. Also, provided the emulsifying agent is of good quality, there should be a saving of oil.

Knitted Pile Fabric

Technical Editor:

Inclosed are samples of fabric in tan and red shades which we would like to produce. We believe that we have some idea as to the knitting principle involved in the production of this goods and are inclosing herewith a sample of white fabric showing what we produce on rib machine by using blank needles on the dial and latch needles on the cylinder. We cannot, however, understand how so much face yarn is packed into the fabric as shown on the colored samples and would appreciate having a diagram of the mechanics involved in producing the pile fabric. (8750)

Your own fabric shows only one end of rayon. For this gage of machine we recommend at least three ends of 300-den. rayon for the loop, if you are to cover the face solidly. Also, we believe it advisable to raise the dial considerably to draw about twice as long a loop as you are now doing. The cloth should then be put through a shearing machine to cut the loops and obtain the fabrics similar to the colored samples.

Winding Equipment for Throwing

Technical Editor:

In estimating the number of winding spindles required for a silk throwing plant, what would you use for the average number of yards per pound for 2-, 3-, and 4-thread yarns? The yards per pound of raw silk would be changed somewhat because of take-up of soaking solution and because of the percentage of contraction due to twist. We believe there has been a change in the silk hosiery industry, and that the mills are now using yarns with a much higher twist. Would the reduction in yardage from the two causes above mentioned be as much as 20% for average silk yarns? (8646)

Practice varies. Some recommend use of the figure 300,000 yd. per lb. for single end 13/15 den. soaked silk. They point out that while fourteen den. silk contains 318,895 yd. per lb. this is reduced from 4 to 11%, depending upon the type of soaking used. A further varying factor is the exact average size of a particular lot of raw silk, which may vary from 13.50 to 14.50 den., or a difference of 7%. Also the winding qualities of a given lot vary greatly, and it is stated that it is well to calculate on 85% of the theoretical production, although on good and bad lots the actual winding efficiency may vary from 75 to 95%. Take-up due to twist, it is said, has probably less bearing upon this problem than any of the other factors, ranging from ¼ to 9%.

Another factor is moisture content, which in practice ranges from 7 to 12%; the conditioning weight is computed at a regain of 11% or 9.9% moisture content.

Another view on this question is that a logical basis for estimating the number of winder spindles would be the number of raw pounds to be processed. It is stated that, although it is true that these yards per pound would be reduced in soaking and twisting, just how much would depend upon the formula used and the twist inserted, and in no normal case would the decrease amount to as much as 20%. 10% would generally be more nearly correct. If calculations were based on the raw yarn, the actual winding capacity, in pounds, would be slightly in excess of the requirements based on thrown silk. As a matter of fact, according to this viewpoint, there should be a slight

winding spindle surplus since twisters, not winders, are the production machines. It is pointed out that winding speeds and operator efficiencies are much greater variables than soaking gain and twist take-up, and must also be considered in estimating equipment.

Dyeing Rayon Fabrics

Technical Editor:

Will you please send me any data available on the Weidmann system—supposedly a process for rope dyeing of taffetas and other rayon fabrics. (8745)

The Weidmann method of dyeing consists of first sewing the entire dye lot end to end. The cloth is then entered into the winch dye beck and threaded up like a dolly washer. That is, one end is thrown over the reel and the cloth allowed to fold or accumulate in the dye beck until the operator (by timing the number of seconds the reel has turned) decides there is enough cloth in that particular space. The end is then thrown over the reel again and a second line started, etc. Each line goes over the front guiding roll between two sticks and then over the reel. The cloth pulls over the reel like a screen until it reaches the end. The latter goes through a porcelain pot eye and drops into a trough. The latter was originally located outside the box but in the newer models is directly under the reel. From here it is pulled through a second pot eye located at the beginning of the machine. The first and last ends are then sewed together. No trouble is encountered in this method of dyeing, provided the operator times each string so as to have the yardage equally distributed over the machine. About 100 yd. per string is the maximum load for the average box.

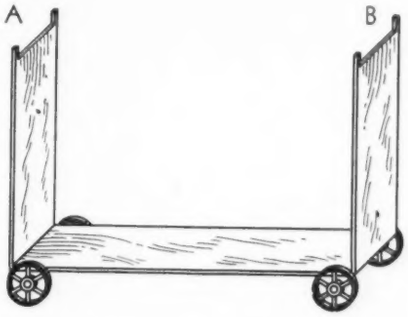
The Weidmann dyeing method does away with uneven dyeing due to short and long pieces and also with uneven dyeing due to variations in temperature in the box. It also saves the time needed to sew up goods after dyeing, and keeps single dye lots as a unit. The same classes of dyes are used as with other methods.

Boiling-Off Rayon Fabrics

Technical Editor:

We are boiling-off cynaras, alpacas, matelasses, and other fabrics of this type on a stick boil-off. We have had some trouble with break marks, usually a very thin line across the width of the piece. We should appreciate your comments as to whether marks can also be caused by mishandling before boil-off, such as careless shipping and rolling up of pieces at the mill. (8726)

The marks described can be caused by careless handling in the gray, but are usually due to mishandling in the finishing plant. Break marks can be caused by placing the reeled-up pieces for the stick boil-off flat on a truck and then piling up piece after piece until the complete lot is ready to push into the boil-off department. Usually the weight of the cloth causes the fold to



leave a sharp impression. Such marks are avoided by using a truck shown in the accompanying sketch. The cloth is mounted on the boil-off sticks and the latter are placed across the truck from *A* to *B*, with the cloth extending down freely without any pressure.

Cotton and Mohair Fabrics

Technical Editor:

We are inclosing a small piece of cloth and will appreciate your advising us what the cloth is used for, what market there is for a fabric of this kind, the cost and selling price of the cloth, and what the material is made from, and where the yarn can be obtained. (8743)

The fabric is 46x30 cotton and mohair union fabric intended for lining in the lapels and other portions of ready-to-wear clothing. The cloth is woven from 8.4s low-grade cotton warp. The filling is approximately a 15s mohair (figured on worsted system) with a small percentage of black hair twisted with. The cloth weighs approximately 7 oz. per sq yd. and is 60% warp and 40% filling. There should be a limited demand for this fabric from manufacturers of men's and women's ready-to-wear clothing, and from tailoring establishments. The yarns should be available from a yarn dealer or from mills upon submission of samples of the yarn from this fabric.

No attempt has been made to estimate cost since complete manufacturing data is not available.

Finishing Burlap

Technical Editor:

*We are inclosing herewith samples of jute burlap. Sample **A** is the finish that we require, Sample **B** is our attempt at the desired finish, and Sample **C** is a piece in the unfinished state. Sample **B** was twice put through the following solution: 30 lb. tapioca, 30 lb. cornstarch, and 45 gal. water. The goods were dried after each starching; i.e., starched and dried, and starched and dried, and then put through a rotary press. We shall appreciate your advice as to just how you think Sample **A** has been finished, together with the class of equipment used, such as mangle, calendar, dryer, etc. (8744)*

We believe that you will be able to size this type of burlap with a vegetable gum of the starch-base type. You should be able to duplicate the finish desired by giving the goods one run through a starch mangle or size box with the squeeze rolls set to give a light squeeze. The burlap should run down into the size solution and then up through the squeeze rolls which should be set to remove the excess but not to remove too much size. The fabric is then dried on dry cans or other suitable dryers. We doubt if calendering will be necessary, but the sample submitted was too small for us to be certain on this point. The concentration of gum can only be determined by trial on the actual machinery used. We believe that about 1 lb. of gum to 5 or 6 lb. of water will be right. If the finish is too brittle, add enough glycerine to give the desired plasticity. The gum is mixed with cold water and stirred for a few minutes, then heated to a temperature of 185° F. and held until it becomes water clear. It is then ready to use. It can be used hot, or as cool as 125° F., without affecting its properties.

Fabric Pulls Apart at Stitches

Technical Editor:

Inclosed are two swatches of oiled silk and rayon joined together. No. 1 is from a roll with which we have had no trouble. No. 2 is from a roll with which we have trouble as follows: after we join the oiled silk and rayon and sew up the cover, the rayon starts to pull apart at the stitches toward the top of the cover where the pull or tension is greatest. We have tried using a fine needle and a small stitch but get the same trouble. Kindly advise us whether the fault is on our end in the manufacture of the cover or whether there is any difference in the structure or finishing of these two materials. (8723)

Examination of the samples indicates that Nos. 1 and 2 are not of the same construction; that is, No. 1 is made from 120-den. rayon with 52 picks per inch, while No. 2 is made from 150-den. rayon with 48 picks per inch. However, we believe that the real cause of your trouble is the difference in finish. In sample No. 2, the finish is harsh, and when you sew the cover, the fabric cracks at the seams, causing the stitch to pull apart. If sample No. 2 were given a soft finish; *i.e.* the same finish as No. 1, you should not have any trouble with it.

LOOMFIXERS' MANUAL

COTTON SECTION—Chapter XII

By IVAR MOBERG

Filling Cutters

THE OBJECT of filling cutters is to sever the filling from outgoing bobbins at the transfer and to hold the severed end of the filling until it is cut by the temple cutter close to the selvages.

Fig. C82 shows a Draper-Roper filling cutter. Although more up-to-date cutters are now available, there are still large numbers of looms equipped with this device. To set and adjust this cutter, proceed as follows:

Remove the entire cutter assembly from the loom and place the shuttle-feeler bracket vertically in a vise. Move the cutter on the shuttle feeler as far as it will go into cutting position to ascertain whether the shuttle feeler is horizontal. If necessary, file off the stop on the shuttle feeler until an imaginary line, drawn through the center of the shuttle feeler, would occupy a horizontal position. If the stop has already been overfiled build it up by welding, or use a new shuttle feeler.

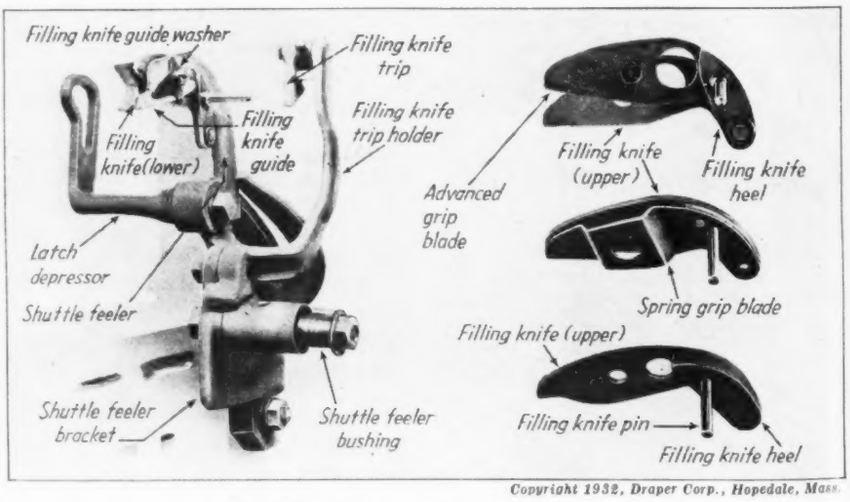
Try the cutter at several places to make sure it will cut cleanly anywhere along the cutting edge. Loosen or tighten the screw pressing the blades together until the pressure is just enough to prevent the cut filling from being pulled out of the cutter. If the edges of the upper and lower filling knives are not sharp enough to cut the filling cleanly under this pressure, sharpen them or install new knives. In sharpening, take care to preserve the original angle of the cutting edge. It is necessary to round off the edge opposite the cutting edge on the upper knife and the edges on the knife guide, so that the filling will not be cut on both sides of the upper knife. The filling should be cleanly cut by the right side of the upper, but only pinched and held by the left side. The writer prefers the upper knife equipped with a spring-grip blade and a fiber knife guide between the knives. This forms a double pinch on the filling and the cut filling is held securely.

After the cutter is so adjusted that it properly cuts and holds the filling, close the cutter and let the shuttle feeler drop down to its normal position in the bracket. Note whether the filling-knife pin passes by the filling-knife trip. Again move the shuttle feeler into cutting position, and make sure the knife is fully opened by the knife trip as the knife pin passes underneath it. Bend the knife pin slightly, if necessary, so that the knife trip will just fully open the knife. If the knife pin does not slip by the knife trip in the return movement of the shuttle feeler, the chances are that the shuttle feeler binds in the guide slot in the bracket and does not go all the way back. If this is the case, file the guide slot in the bracket until the shuttle feeler drops to the bottom of the guide slot. Also, the knife-trip holder may have too much of a back slant; it can be straightened somewhat by filing its lug resting on the shuttle-feeler bracket.

The assembly is now complete and can be placed in the loom. Engage the feeler to turn the starting rod into transfer position and lightly bolt the shuttle-feeler bracket to the loomside. Hold the latch finger up and move the lay forward until the bunter on the lay just contacts the latch finger. (The latch finger must have previously been adjusted to the proper length.) Set the shuttle feeler within $\frac{1}{4}$ in. of the box back, and as close as possible to the box plate without touching it. The top of the shuttle feeler should be horizontal. Tighten the bolts in the bracket and ascertain whether the shuttle feeler clears the point of a fully boxed shuttle by $\frac{3}{16}$ in. If not, remove the bracket and file the filing blocks on its back until this clearance is obtained, with the bracket tightly bolted to the loomside. The shuttle feeler should now be firmly against its stop. If it feels loose to the touch, the cutter will be prevented from cutting the filling, and the transfer may be prevented altogether. In the latter case, the fault may be caused by the spring hook being too far advanced and striking the shuttle-feeler hub, or the shuttle feeler finger set too low, or the spring-hook spring too loose.

Install the latch depressor and turn it in its conical recess until it supports the latch finger at a height which will allow the bunter on the lay to strike the finger just below the base of the notch, as the lay is moved forward. Now test the setting by placing a piece of filling in the open cutter and moving the lay forward until the bunter on the lay comes in contact with the latch finger. At this point the cutter should be closed and the filling cut. If it is not, recheck the position of the shuttle-feeler bracket to see if it is far enough advanced. Moving it a trifle nearer the box back usually will make the cutter cut the filling at the proper point. If the shuttle-feeler bracket cannot be advanced further without the cutter striking the box back, the part on the bunter that closes the cutter may be built up a trifle by welding. A piece of leather can also be tacked to the lay in such a position that its flap will cover the part of the bunter that closes the cutter, thus advancing the closing of the cutter. This, however, is not as durable as building up by welding.

(To be continued in an early issue)



Copyright 1932, Draper Corp., Hopedale, Mass.

Fig. C82. Draper-Roper filling cutter

NEWS OF THE MONTH

N.A.C.M. Meeting Plans

Further details concerning the plans for the annual meeting of the National Association of Cotton Manufacturers have been announced. The meeting itself will be held at the Providence-Biltmore Hotel, Providence, R. I., Oct. 9. Governor Vanderbilt of Rhode Island will welcome the members of the association to his State. M. D. C. Crawford will be the principal speaker at the banquet. Russell T. Fisher, president of the association, will have general charge of the meeting.

On the next day, Oct. 10, the association will participate in anniversary exercises at the old Slater Mill in Pawtucket, to mark the 150th anniversary of the founding of the Slater Mill.

North Carolina Mills Damaged by Flood

North Carolina mills suffered considerable damage during two recent floods, the worst since 1916. The disaster was Statewide.

Great damage was done to Roanoke Mills Co's. No. 1 plant, Roanoke Rapids, N. C., the largest single producer of fancy napped flannels, and this upset the napped goods market considerably. The Roanoke River was 58 ft. above normal level. It will be 8 weeks before the plant can be operated and 12 weeks before its product can again be shipped.

At American Enka Corp., near Asheville, N. C. the 12 ft. power dam gave way and poured a 5 ft. wall of water from Hominy Creek into the plant. All rayon in process of manufacture was destroyed. Damage said to total several hundred thousand dollars was done.

Rhodes-Whitener Mills, Inc., Taylorsville, N. C., was damaged when the flood swept through the first floor, washing part of the machinery through the rear wall of the mill. The Liledoun Mills, Inc., also of Taylorsville, suffered considerable loss.

The Fieldale unit of Marshall Field & Co. had some damage from the flood as the water reached the power plant. However, all motors had been removed as a precautionary measure and products stored in the warehouses had also been moved to higher points.

The Double Shoals Mill Co., despite heroic efforts to save machinery in the power house, suffered great damage from flood waters which took the entire building. The Cleveland Mill & Power Co. lost its dam and much of the machinery was damaged by water and mud.

Henrietta Mills had several hundred looms covered by flood waters and the Henry River Mills Co. was also damaged considerably. Water reached the Long Island Plant of the Superior Yarn Mills but damage has not been estimated at this writing.

Aircraft Fabric Concerns Indicted

The special Federal Grand Jury which has been investigating industries engaged in supplying the Government with material and products in connection with the national defense program, returned an indictment, Aug. 27, against four companies and six of their officers on a charge of an alleged price-fixing combination in the sale of aircraft fabrics. The corporate defendents named were Wellington Sears Co., Inc., Suncook Mills, Thurston Cutting Corp., and the Air Associates, Inc. The indictment charged that "these companies got together in 1936, and agreed to increase the then existing prices of aircraft fabric, and since that time these companies have maintained identical prices on such fabric."

Urges Jute Restriction

The new status for India growing out of the war justifies the American cotton industry in demanding a restriction on our jute imports which would increase domestic cotton consumption by 500,000 bales a year, Dr. Claudius T. Murchison, president of the Cotton-Textile Institute, told the 20th anniversary meeting of the Delta Planters at Stoneville, Miss., Aug. 13. He also outlined the Institute's cotton promotion program through which it is hoped within the next three years to increase American cotton consumption to 10,000,000 bales a year—an increase of 25% over the all-time record.

Jantzen to Spin Flax

Jantzen Knitting Mills, prominent manufacturers of swimsuits, are entering a new field: flax spinning. One-fourth of their spinning plant space has been converted into a flax spinning

SEVENTH ANNUAL SILK PARADE poster which will be available to stores participating in this quality week that begins Sept. 23. Focal point of the 1940 Silk Parade poster is a draped arrangement of red and blue heirloom silk taffeta and white brocaded silk faille taffeta framed in a montage of news prints and action photographs of fashions in silk. Silk merchandise represented in the montage includes day and evening gowns, bridal gowns, blouses, sportswear, lingerie, hosiery, accessories, rainwear, men's wear, children's wear, decorating silks, thread and, illustrating the strength and dependability of silk, parachutes.

TEXTILE CALENDAR

Southern Hosiery Mfrs. Assn., annual meeting, Grove Park Inn, Asheville, N. C., Sept. 13 and 14, 1940.

Denier Club, outing, Old Oaks Country Club, Purchase, N. Y., Sept. 19, 1940.

Greenville (S. C.) Cotton Festival, Oct. 3 to 5, 1940.

National Safety Congress, Stevens Hotel, Chicago, Oct. 7 to 11, 1940.

National Association of Cotton Manufacturers, annual meeting, Providence-Biltmore Hotel, Providence, R. I., Oct. 9 and 10, 1940.

Alumni Association of Philadelphia Textile School, testimonial banquet to Bradley C. Algeo, Penn Athletic Club, Philadelphia, Oct. 18, 1940.

American Association of Textile Chemists and Colorists, 20th annual meeting, Hotel Commodore, New York, Oct. 18 and 19, 1940.

North Carolina Cotton Manufacturers Association, annual meeting, Carolina Hotel, Pinehurst, N. C., Nov. 7 and 8, 1940.

Alabama Textile Operating Executives, Semi-annual meeting, Auburn, Ala., Nov. 9, 1940.

Fourteenth National Exposition of Power and Mechanical Engineering, Grand Central Palace, New York, Dec. 2 to 7, 1940.

Southern Textile Exposition, Textile Hall, Greenville, S. C., March 31-April 5, 1941.

plant, with a production of 400 lb. of tow yarn per day. The entire output will be taken by the American Flax Co. of Midland Park, N. J., who will use the yarn in the manufacture of crash towels and fire hose. Domestic flax—grown in the Willamette Valley—is being used. Only the tow fiber is being spun at the present time. Jantzen has adapted its own worsted spinning equipment for the new purpose, plus some imported machinery.

Defense Symposium

"Textile Preparedness for National Defense" is the topic of a symposium to be conducted by American Association of Textile Technologists at Hotel Commodore, New York, Oct. 1. The meeting will be open to the public. The program so far arranged includes talks by Arthur Besse, president, National Association of Wool Manufacturers; Lt. Col. George F. Spann, on "How Textile Mills Can Fulfill Government Contracts Most Efficiently"; Lt. Lawrence Smith, on "Textiles Used in Navy Uniforms"; and Capt. A. Dennis, on "Textiles Used in Army Uniforms."

At the September meeting Bernard S. Hillman, treasurer, Keen Dyeing Corp., spoke on "Dyeing and Finishing of Rayon Fabric".

Hosiery Wage Reductions

Announcement that Durham (N. C.) Hosiery Mills reduced wages 10% effective early this month brought to a head recent rumors that numerous southern hosiery mills had already reduced wages or were contemplating such a move. At this writing it is known specifically that 12 or 15 companies have adjusted wages downward 10 to 20% and it is thought inevitable that others will be forced to follow despite efforts of some of the more important units to maintain the present level. From the consumer's standpoint a reduction of 10 to 20% will amount to only a few cents a pair in the price of the finished hose.

DEKO-LEG, a device patented by A. R. Sanders of Madison, Wis., to lend charm and distinction to feminine dress. The item is a prettily printed butterfly, bird, flower, or other subject on a flexible, transparent, disk, which is worn under the hosiery.

Southern full-fashioned mills are now operating 80 to 90% of the time on a two-shift basis against drastic curtailment a few weeks ago. Pennsylvania mills are using southern wage reductions in their demands for like concessions from the union which is expected to resist. Overproduction is admitted to be the cause of the slow market.

CLAD FROM HEAD TO TOE in garments made with Nylon fabrics, the first of all women to wear it this way, is the description given to "Miss Chemistry of the Future," at Du Pont Exhibit, New York World's Fair, who wears this dinner gown of experimental Nylon lace. Her stockings and underwear are also of Nylon.

Algeo Banquet Plans

Attendance at the Bradley C. Algeo testimonial banquet will tax to capacity facilities of Penn Athletic Club, Philadelphia, where the banquet will be held Oct. 18, 1940, according to Frank L. Giese, in charge of reservations. The testimonial is sponsored by the Alumni Association of Philadelphia Textile School, of which Mr. Algeo was president for 39 years, until his retirement earlier this year. T. B. Hayward is chairman of the banquet committee.

Mills Charged With Wage-Hour Violation

A judgment and stipulation involving six South Carolina manufacturing plants was handed down by the Federal Court late last month charging that the mills were in violation of the Fair Labor Standards Act. The action

was against Nuckasee Mfg. Co., Greenville, S. C., and five of the Hamrick group of mills located in the vicinity of Gaffney, S. C. The judgment enjoined and restrained the defendants from paying the employees less than the prescribed amount per hour, and from employing them for a longer week than prescribed at rates less than one and one-half times the regular pay. The stipulation required that the defendants pay the employees a sum of money equal to the difference between the amount they actually were paid and the amount they should have received under the Wage-Hours Act.

The Hamrick mills filed an answer denying a majority of the allegations; no appeal had been filed at this writing by Nuckasee Mfg. Co.

American Woolen Shows Small Profit

A net profit of $394,430 is reported by the American Woolen Co., New York, for the first six months of 1940, compared with $357,670 for the similar period in 1939. Net sales for the 1940 period amounted to $28,973,736, against $30,719,436 in the first half of 1939. The big company started the second half of 1940 with a backlog of orders 18% in excess of those on hand when the first half of the year started. This change in situation was entirely due to Government contracts awarded in June, since civilian orders were actually 20% less than at the beginning of the year. It was stated that earnings since Jan. 1, 1940, have not justified dividends.

Greenville Cotton Festival

Over 1,000 high-school girls, wearing cotton dresses designed and made by themselves, will take part in a huge style show which will be part of the National Cotton Festival scheduled to be held Oct. 3, 4 and 5 at Greenville, S. C. Other features of the festival will be a large exhibit of cotton products in Textile Hall and a parade of floats stressing the importance of cotton to South Carolina. There will be a coronation ball for adults and a similar but separate ball for children during the festival.

BERLIN COMMUNIQUE

A mass test by 200 shapely legs marked a new German industrial triumph while the Reich is at war—mosquito-proof stockings—the testers announced in Berlin, according to the Associated Press.

The test was finished by 100 pretty frauleins wearing play suits and the insect-proof hosiery. They went out to Wansee, Berlin's vacation playground, where mosquitos have been chewing for years on German calves. They said even the biggest mosquito was completely baffled.

One of the oldest hosiery factories in the Reich has been working on insect-proof and rain-proof products and its achievement was the rage of the Leipzig Fair. The factory insists that during the Wansee trip all the girls escaped—except one. She wore ordinary hose on one leg and bite-proof on the other.

TEXTILE MILL SIDELIGHTS—No. 19

"Hm-m! Throw this one out: it's imperfect."

Apex Files Suit in State Court

Apex Hosiery Co., Philadelphia, on Aug. 14 entered a $1,171,957 damage suit against the American Federation of Hosiery Workers in the Pennsylvania Common Pleas Court. It will be recalled that suit was originally brought in the Federal Court and that the Supreme Court upheld the setting aside of an original damage verdict because it found no direct interference with inter-State commerce. In the Federal Court's opinion it was pointed out by the judges that redress for the company was up to the State Court. The dispute goes back to alleged damages resulting from a sit-down strike in 1937.

The union on Aug. 28 asked that Apex show cause why the suit should not be referred to an arbitration board.

Dyers' Union Ratifies Contract

Danger of a strike in the silk and rayon finishing industry in the Paterson, N. J., area was averted on Aug. 28, when members of Local No. 1733 of the Federation of Dyers, Finishers, Printers, and Bleachers of America ratified a new contract with employer companies to replace the one which expired on Aug. 30. The new two-year contract, which previously had been ratified by all other locals in the union, sets up an arbitration board to decide what work load should be adopted by the various firms affected by the contract and provides for five holidays a year with pay.

Safety in the Mill

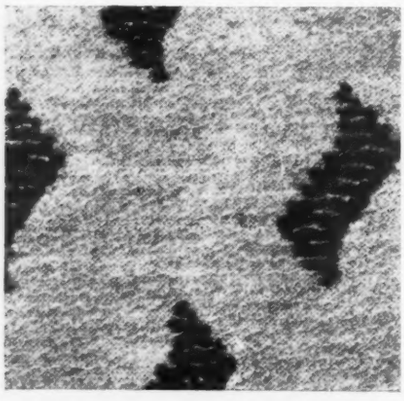
Various phases of safety programs in textile mills will be discussed at the 29th Congress and Exposition of the National Safety Council to be held Oct. 7 to 18, in Chicago. Papers to be presented at the meeting of the Textile Section on Oct. 8, include "Methods of Developing a Competitive Safety Program," by Phil J. Monroe, Mooresville Cotton Mills, Mooresville, N. C.; "A Competitive Safety Program That is Working," by Ralph I. Sturtevant, manager, Shelton Looms, Rocky Mount,

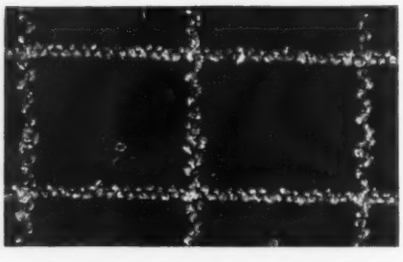
N. C.; "Textile Safety Through the Plant Nurse," by Frances Bethune, plant nurse, Firestone Cotton Mills, Inc., Gastonia, N. C.; "Methods of Eliminating the Causes of Textile Accidents," by John J. Burger, secy., safety committee, W. J. Dickey & Sons, Inc., Oella, Md.; and "Safety Successes in the Textile Industry are Recognized," by S. C. Hickok, employment manager, Pacific Mills, Print Works Division, Lawrence, Mass.

New Effects in Knit Goods

Circular-knit jersey-type fabrics with knitted-in stripes, checks, spots, and other patterns closely approximating those ordinarily obtained by weaving or embroidering, are being offered by Lombardeen Fabrics Co., Brooklyn, N. Y. The effects are produced by means of recently patented attachments for the jacquard circular knitting machines manufactured by Lombardi Knitting Machine Co., 270 W. 38th St., New York. Both companies are operated by the same interests.

One advantage cited for the new method, which so far has been applied only to woolen fabrics, includes elimination of the necessity of carrying decoration yarns on the back of the fabric. This, in turn, makes it possible to use better, more expensive decoration yarns, since a much smaller quantity is consumed; it also does away with heavy bulkiness which might result from carrying yarns on the back of fabrics.





Circular-knit jersey fabrics with unusual knitted-in design effects (fabrics shown half true size)

Print Cloth Case Oct. 14

Charge of violating the Sherman anti-trust act will be brought by the Federal Government against print cloth manufacturers Oct. 14 at Greenville, S. C. The Government has indicated that it will lay considerable stress on a recent Supreme Court ruling, at Madison, Wis., against a group of oil companies charged with similar violation. U. S. attorneys have in hand all records and correspondence concerning the action of the mills, given them voluntarily by the Print Cloth Committee which insists that the mills have neither legally nor morally violated the anti-trust act. The hearing is expected to last several days with much of the testimony bearing on economics of the textile industry. Full data on production and sales during period covered by the plan have been submitted to the Government by W. P. Jacobs, secretary of the print cloth group.

"Heil Vistra-Spinnlunte"

"A sensation which will revolutionize the textile industry" is the way in which cabled A.P. reports from Germany "heil" the "Vistra-Spinnlunte," a new type of spinning device exhibited at the Leipzig Trade Fair. Details are hazy on this machine which will "be of great importance to Germany's wartime production" and which will "usher in a new epoch in the textile industry." Apparently, it is designed to cut rayon staple fibers to uniform length and to lay them down in an orderly manner so as to eliminate some of the operations preliminary to spinning which are now necessary. The equipment is said to be expensive, but not so expensive as all the machines it will replace. The Intelligence Division of TEXTILE WORLD's National Defense Board is endeavoring to obtain the plans and specifications for this mechanism.

Textile Study Courses Revised

The standard textile study course for evening classes and secondary schools of the southern region was revised and brought up to date at a recent meeting of the Southern Textile Education Committee held in the Parker School District, Greenville, S. C. Major changes in the study course are inclusion of material for the instruction of students in dyeing, bleaching, printing and finishing, and addition of material relative to improved long-draft preparatory equipment. The committee, composed of industrial education teachers, meets every several years for this purpose. W. D. Vincent, of Danville, Va., is chairman.

PLIOSHEEN, a fabric recently announced by Goodyear Tire & Rubber Co., Akron, Ohio, is produced by coating silk or rayon piece goods with a synthetic substitute for rubber. Pliosheen is said to be waterproof, odorless, flame-resistant and free from oil. The fabrics can be produced in clear white, pastel shades, or deep tones—all of which are sun-resistant and proof against cracking or peeling. As shown by the accompanying illustration, printed effects can also be obtained. Potential applications cited for Pliosheen include raincoats, shower curtains, drapes, umbrellas, hospital sheeting, oxygen tents, and infants' wear. The fabric will be distributed by Harte & Co., 267 Fifth Ave., New York.

And Now Nylon Hosiery for Men!

The hosiery market awakened last month to the fact that Nylon hosiery for men was a saleable item. New York retail stores began the advertising of such items and the general price seemed to be $1, with Macy selling at 94c. Altman offered Nylon half-hose made by Propper-McCallum at $1.50. Another store listed Nylon reinforced toes in seamless rayon half-hose at 39c. It was felt by those in the know that most of the purchasers of men's Nylon half-hose at retail were women.

To Identify Burlington Fabrics

The Burlington Mills Corp. has announced plans for a fabric identification program, as the result of a demand from garment manufacturers for such identification in connection with Burlington's rayon fabrics and garments made therefrom. The Burlington name will thus be carried through the converter's customers and to the retail trades. It will focus upon the brand name "Bur-Mil."

Cottons Below Expectation

The cotton textile market did not live up to expectations during August although a fair day-to-day business was recorded. After a brisk period late in July, the market dragged along with buyers unwilling to make extensive forward commitments. The industry's backlog beyond September is light, but Government orders are helping to improve the situation and it is presumed that civilian buyers will continue to operate at least in piece-meal fashion since their stocks are probably light. Up to the end of the month buyers were paying full market prices. As these do not show much profit to mills, the market will probably be sensitive to any real increase in buying operations.

Spring 1941 Men's Wear Starts Slowly

Summer fabrics for 1941 were formally placed upon the market around the middle of August. Tropical worsteds, with advances of about 12½c. per yard over a year ago, were up about 10%, while gabardines with increases of 22½c., marked a rise of about 13%. Clothiers say the advance in price of fabrics and other materials will mean a rise of 5 to 10% in the price of summer garments at retail in 1941 as compared with the summer season now closing. Buyers are showing themselves very cautious, and despite likely stability in raw wools and scarcity of goods while mills run on Army orders, they are not committing themselves far ahead. The demand for women's wear is spotty, but unfilled orders on these goods in the hands of mills are about 8% ahead of last year.

Through the month prices of wool were strong. Spot tops on the New York Exchange which were 98c. on Aug. 1 rose to $1.04 on Aug. 30. Domestic wool production for 1940 is estimated at 388,692,000 lb., the largest figure on record and 8% above the average for the last ten years.

Active Forward Buying of Rayon

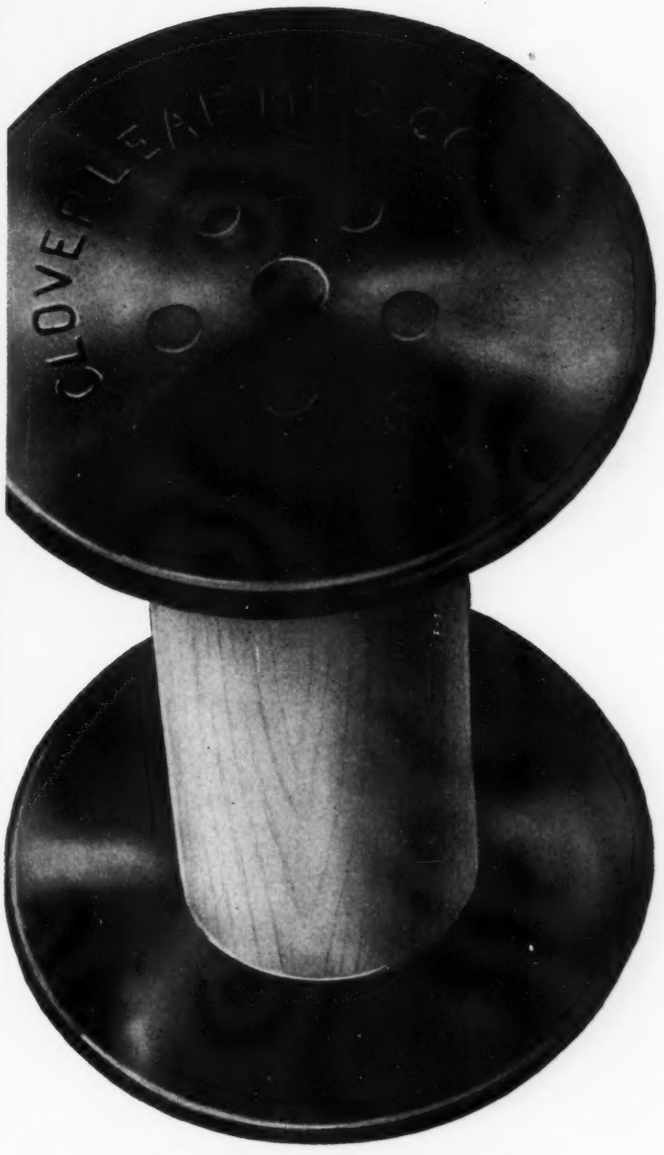
The rayon yarn market was active through August, and no accumulation of yarns in first hands is in prospect. Acetate yarns, both continuous filament and staple, are in better than normal demand since fabrics which involve the use of both types are rising in popularity. In viscose-process fabrics, there is still general interest in pigment taffetas but competition has driven the price of these lines to a low point. A return of interest in crepes may be experienced, and some operators look for further interest in prints on sheer grounds. Spun rayons expand in various new fields with particular stress upon rayon blended blankets and spun rayon summer ties.

Japan Stimulating Silk Market

The latest effort on the part of the Japanese to increase consumption of silk and to favorably affect the price, comes in a decree announced late in August to the effect that after Oct. 1 all spinners (with a few exceptions) must mix silk with any other fibers they use. Already a special advance has been made by the Bank of Japan to the Imperial Silk Corporation to permit expansion of the government's price stabilization plan. The government's figure for purchasing silk is on basis of 1,350 yen for grade D and market was slightly above that at end of August. The pegged price did not stimulate demand in this country; rather, on the contrary, business here lately has been on the dull side.

Low Prices May Help Silk Hosiery

Women's full-fashioned hosiery market has faced many merchandising problems during the last 18 months in endeavoring to solve its present difficulties by the introduction



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A double purification process makes it low in salt content, low in carbonates, and extremely low in iron.

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Chemicals

of new silk numbers at low prices to attract consumer interest. One mill, for example, has eliminated from its lines all silk hosiery retailing about $1, reserving the higher price brackets for Nylon. Other houses are offering numbers in all-silk with plaited foot to retail at 59c., and still other all-silk numbers as low as 79c.

Preparations for the Christmas trade in silk hosiery are already under way. December is the year's most important month in women's hosiery and reports from retailers indicate that more than twice as much business is done in women's hosiery in that month, as in any other one month during the year. Manufacturers of standard full-fashioned silk goods have continued prices without change for deliveries to the end of October.

Underwear Outlook for Fall Is Bright

New business in underwear for fall has been coming in steadily during the last few weeks and a good rate of mill operation is expected. Buyers are picking up what bargains they find around, and there has been good demand for seconds in the standard ribbed garments for men. From various sources come reports of successful sales of rayon underwear for men. Such items are being sold by Sears, Roebuck at 35c. each for men's shirts and shorts making them competitive with standard cotton garments.

Outerwear Trade Improving

Knitted outerwear mills ran fairly well during August, somewhat ahead of actual orders because of some thought that strike threats might bring curtailment at the peak of the new season. The collective labor agreement for the knitted outerwear industry in the metropolitan area of New York has been approved by all parties at interest for a continuation for another two years at approximately the same terms as heretofore with the additional benefit to workers of a week's vacation with pay.

The National Knitted Outerwear Association is undertaking a campaign to curb abuses by chain and department stores which may be acting contrary to the Robinson-Patman Act and to the fair trade practice rules of the knitwear industry. The abuses have to do principally with requests for additional discounts and irregular practices regarding cancellations and returns.

This and That

Atlantic Research Associates, it is said, will increase production of Aratex, a synthetic fiber derived from casein. The fiber is now being employed in manufacture of hats and upholstery fabrics, and experimentally in production of apparel fabrics.

Aspinook Corp., Jewett City, Conn., first finishing company to receive a license to use the Sanforset process for eliminating shrinkage in rayon fabrics, announced late last month that it was ready to put the process into operation.

National Association of Hosiery Manufacturers has requested its research associate at the National Bureau of Standards to develop an official comparison of yarn sizes for silk and Nylon.

A permanent 3,000 sq. ft. annex to Textile Hall, Greenville, S. C., will be built after the 1941 exposition is over and in time for the 1943 exposition. A temporary annex of 1,600 sq. ft. will be added for the 1941 show, which will be held March 31 to April 5, 1941.

Employee stockholders of the Hancock Knitting Mills, Philadelphia, after a stormy meeting voted to ask their

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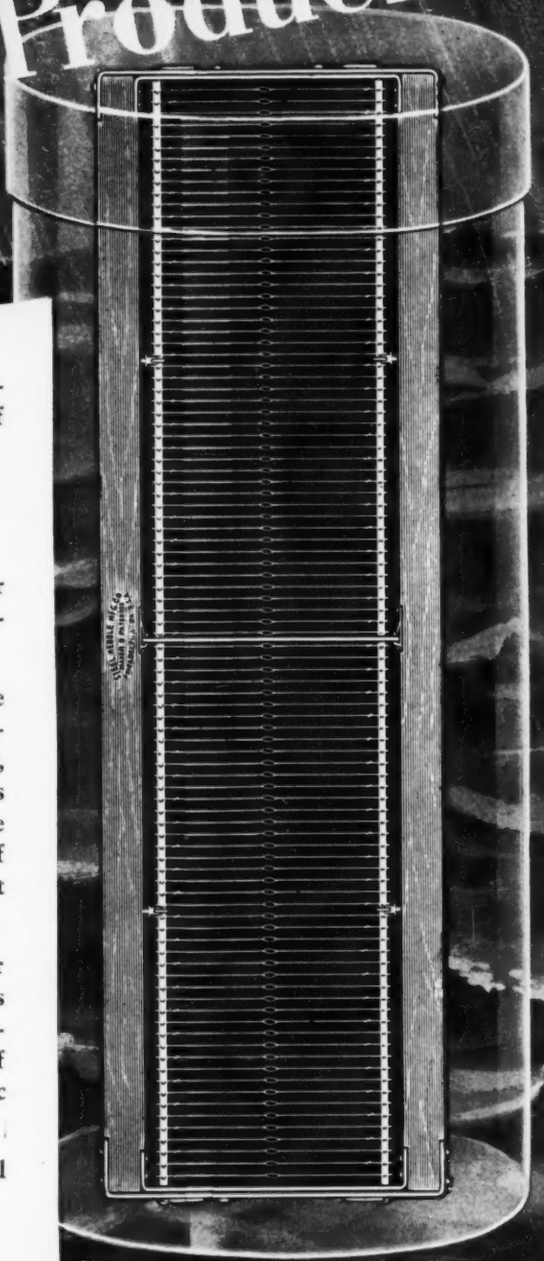

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The Gold Seal Waterproof Finish

(An exclusive Stehedco feature)

All Stehedco frames made of spruce, pine or other lumber are all finished in this super protective material.

This new application removes many of the former disadvantages by granting an absolutely smooth wax-like surface of the lumber, preventing lint or other adhesive substances from clinging to the harness shafts with the result that the daily brushing or cleaning of the loom harness is eliminated to a great extent.

Another very important and long-looked for feature is the waterproof characteristics of this finish, actually making the wooden parts immune to the greatly detrimental effects of weave room moisture, water, or climatic changes.

Ask our Salesmen to show you this beautiful protective finish.

Write for complete facts.

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☐ Aviation		☐ Steam Electric
☐ Boilermaking	☐ Highway Engineering	☐ Steam Engines
☐ Bridge Engineering	☐ House Planning	☐ Steam Fitting
☐ Building Estimating	☐ Machinist	☐ Structural Drafting
☐ Chemistry	☐ Mechanical Drafting	☐ Structural Engineering
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☐ Bookkeeping	☐ College Preparatory	☐ Managing Men at Work
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union to let them cut their own wages so that they could go back to work. A previous effort along these lines by the cooperatives was rejected, but this time it is planned that the workers shall be paid full scale, but return part of the money received in order to keep the mill in operation.

"Depth—a new third dimension makes Controlastic bathing suit fabrics exciting!" Such is a slogan of the Firestone Style Bureau, Fall River, Mass., which finds increasing interest in surface effects which heighten the drama of pattern and color.

A novelty in sports socks is a new "divided" number, which is in effect a two-piece stocking. A short sock covers the foot and has a ribbed top with colored trim just above the ankle. There is a matching band of ribbed material with similar colored edging to cover the calf. John Wanamaker, New York, features such hosiery under the name "Calf-ettes", and the price is $1.95.

Nylon lace makes its debut in a *Popular Science* short movie feature soon to be released by Paramount Pictures, Inc. The story of Nylon is told in popular vein. The word Nylon is mentioned only three times in the film and DuPont not at all. The lace used in a dress shown in this movie short is made by the American Lace Co.

Employees of the Pacific Mills and Arlington Mills, Lawrence, Mass. recently filled several special trains on a trip to the New York World's Fair.

British manufacturers of rayon yarn increased prices 3c. on Sept. 1. It was understood, however, that concessions might be made upon proof that the fabric or made-up goods for which the yarns were required were for export.

Pepperell Mfg. Co. has added an all-wool blanket to its line for fall, called Pepperell Peeress which retails at $10.95. This is the highest price number in the company's line. It is made in 72x90 size and weighs 3½ lb.

A bulletin featuring fabric swatches has been issued by E. I. du Pont de Nemours & Co. in the promotion of its rayon style items for fall men's wear. Among the items included are sportswear, windbreakers, neckties, robes and hosiery.

Sayles-Biltmore Bleacheries, Asheville, N. C., gave a dinner for 400 employees on Aug. 10 in honor of their safety record in operating 2,000,000 man-hours in 27 months without a lost time or disabling accident. The company has now set a goal of 3,000,000 hours. A. R. Floyd is chairman of the Plant Safety Committee.

One million cotton sheets and pillow cases to be distributed as premiums by the William B. Reily & Co., Inc., New Orleans coffee dealers, marks the second heat in that company's cotton promotion plan. Last year 3,000,000 cotton towels were distributed as premiums.

The fifth area in which the cotton stamp program will be tried out is Columbia, S. C. and the rest of Richland County. This area is the first to be chosen in a cotton-textile center. Actual operation of the program in Columbia will begin about mid-September. It is estimated that approximately 4,884 families representing 16,500 people will be eligible to participate.

Bigelow-Sanford Carpet Co., Thompsonville, Conn., has inaugurated a class in skilled workmanship and has enrolled 20 students. The program is a part of the defense measures taken by Gov. Baldwin to assure ample supplies of skilled labor in the State. The local committee is headed by E. I. Peterson who is also superintendent of the Bigelow-Sanford plant.

*Climbing Higher Every Day

*No signs of leveling off!

The above curve is accurately plotted from NET monthly sales of Union Special Lockstitch units since their introduction in October, 1934. The chart gives a direct, undistorted picture of the cumulative total of installations.

WHEN Union Special introduced the Lockstitch machine, response was immediate and enthusiastic. When it kept growing, we were gratified and optimistic; but everybody assumed that it would level off in due time and follow the course of any normally good machine

Imagine our surprise as the curve kept rising faster and faster! We want to call your attention to the right hand end of the curve, showing the 2nd three months of 1940. THERE IS NO SIGN OF ANY SLOWING DOWN!

Analysis of the LOCKSTITCH sales record reveals that 1 OUT OF EVERY 3 IS A REPEAT ORDER. In asking buyers their reasons for placing repeat orders, the most frequent answer is "*Because you have given us a Lockstitch machine built up to Union Special standards of construction.*"

The Lockstitch construction includes a number of exclusive mechanical features. It also includes the same quality of workmanship and materials employed in producing the special types of machines for which Union Special is famous.

We will be glad to supply detailed information. Write UNION SPECIAL MACHINE COMPANY, 432 North Franklin Street, Chicago, Illinois.

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RIGHT TWIST
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In 24 Hours!

The same fibre – the same machines – yet he found it necessary to change twist after only 24 hours running. Why? Because humidity had changed, and lack of automatic control in his system failed to compensate for the change. Maintain your twist with Adequate Humidification, provided by the right Amco devices in the right number; their output closely, automatically controlled by Amco Humidity Controls. Modern humidification pays big dividends!

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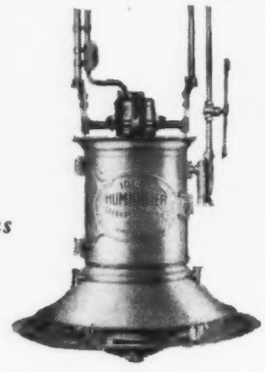
Whatever Conditions Shall Dictate



Your mill condition may call for the Amco Sr. Humidifier which meets a high humidity demand with finely atomized spray, distributed by a dependable motor driven fan. No matter which of the many Amco devices are required – no matter in what quantity – you're sure of "money-making air" when you call in the Amco Engineer. American Moistening Company, Providence, Rhode Island. Boston . . . Atlanta . . . Charlotte.

AMCO *Humidification*

50 Years for Tennessee Mill

American Textile Woolen Co., Sweetwater, has only two presidents in long history

"LET HIM HAVE IT!" shouted a disappointed bidder at a farm auction in Tennessee back in 1877. "He can't pay for it anyway!"

The auctioneer turned to the stranger, "Can you offer proper deposit on that $20,000 bid, young man?"

"Yes sir," said the stranger, "here are $20,000 in Government bonds. Will they do?"

With that decisive purchase at the age of 42, John M. Jones, already a mercantile genius in Eastern Tennessee, entered into the life of the town of Sweetwater, of which he was later to become the leading citizen. In August, 1889, together with other citizens he incorporated the Sweetwater Woolen Mill which began operation on July 1, 1890 with two sets of cards, 720 mule spindles and 32 narrow looms. Mr. Jones was president of the company. He held that office

John M. Jones, founder and first president of Sweetwater Woolen Mill

Fred A. Carter, now president of Sweetwater and with firm for 50 years

until the time of his death at the age of 73 in 1908. In the interim he was an important organizer of the Bank of Sweetwater and its president for many years; he organized the Sweetwater Flouring Mill Co., and was instrumental in setting up the Sweetwater Hosiery Mill.

Just prior to the death of John M. Jones, he sponsored the merger of a number of nearby woolen mills with his company and formed at that time the American Textile Woolen Co. This was a combination of the Sweetwater Woolen Mill, the Athens Woolen Mills, the Park Woolen Mills, the Louisville Woolen Mill and the Atlanta Woolen Mill, under a total capital stock of $1,000,000 common and $1,000,000 preferred. The Atlanta Woolen Mill withdrew from the merger in 1911 and two of the others also changed hands, leaving in the company today the two mills, one at Athens and the other at Sweetwater. The Sweetwater Mill now operates 16 sets of cards, 10,000 spindles and 100 broad looms, and the Athens Mill, nine sets of cards, 5,600 spindles, 126 narrow looms and 32 broad looms. The two mills produce about two and a half million yards annually.

On the day the Sweetwater mill started up, July 1, 1890, a young man began working in the mill office as shipping clerk and bookkeeper. He became secretary and treasurer only two years later, and, in 1908, succeeded the founder in the presidential office. This man is Fred A. Carter who is still president of the American Textile Woolen Co.

Are You *Alert* to this *Producer* Responsibility?

..We Are!

Changing events require foresight and provision for an unknown future. Industry today seeks sources of supply that will be stable and adequate to meet sudden and extraordinary needs. COLUMBIA believes that one of its responsibilities as a producer of basic raw materials is to maintain stocks on hand adequate for any emergency. Here you see some of the giant storage tanks for our factory stock of 50% and 73% COLUMBIA LIQUID CAUSTIC SODA. This is just one of the responsibilities COLUMBIA accepts as a better source of supply for Caustic Soda, Soda Ash, Bicarbonate of Soda, Liquid Chlorine and other Chemicals. A good supply of all COLUMBIA Products is constantly maintained at the Barberton, Ohio plant and in distributors' stocks throughout the U.S.

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PRODUCTION IS UNPROFITABLE!

USE the Unisorb Machine Foundation and reduce your shutdowns, breakage and repairs due to vibration or vibration transmission. Through research and actual working experience, Felters' engineers have proved the efficiency of Unisorb Machine Foundations in reducing vibration to a minimum in industrial plants. Unisorb Machine Foundations can be placed under new or old machines with equal ease.

Installation is simple, cost is low, and results are satisfactory.

Write today on your company letterhead for your copy of the booklet, *"Unisorb in the Industrial Plant"*, which describes many different kinds of installations of machinery.

Some of the uses for which Certified Felt is available:

Acoustical Correction
Airplane Insulation
Auto Chassis Pads
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Coat Fronts
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Filters for Dust Masks
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Shock Absorbers
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Regain of Rayon Warps

Determined by New Method Resulting From Research on Warp Sizing

ONE RESULT of the research on warp sizing carried out under the auspices of the United States Institute for Textile Research was the development of a new method for determination of regain of rayon warps sized on the silk system. This method is described by Dr. William E. Yelland in the August issue of *Textile Research*. One important use of the method is to check the efficiency of warp conditioners installed on sizing machines for the purpose of cooling the warp and restoring to it the moisture lost by over-drying. The procedure for making the regain determinations follows:

1. Record the relative humidity of the warping room.
2. Weigh unsized beam to 0.1 lb. as soon as made.
3. Place the unsized warp beam in the back of the slasher.
4. Weigh an empty beam and place in front of slasher.
5. Slash as usual.
6. Weigh the sized warp beam.
7. Weigh empty beam from which unsized warp was taken.
8. Remove samples for desizing from the sized beam and determine the per cent size in the standard manner.

In subsequent work it was found convenient to take samples for size determinations in the following manner: The warp is allowed to weave in the loom until any convenient cut mark near the middle of the warp comes up. The loom is stopped and approximately 1 yd. of warp pulled through the loom by winding the yarn up on the cloth beam and at the same time releasing the let-off on the warp beam at the back of the loom. The loom is then started again and allowed to run normally. After a few more yards have been woven the sample can be taken off the cloth roll. If a few inches of woven fabric is left at end of the sample, the latter is very easy to handle. The part of the sample reserved for regain determinations should immediately be put in an air-tight container and sealed carefully. The operator should handle the sample as little as possible. It is advisable to wear rubber gloves to prevent moisture from the hands affecting the yarn. The regain is then determined in the standard manner and is recorded as the regain which the warp has under atmospheric conditions in the weave room.

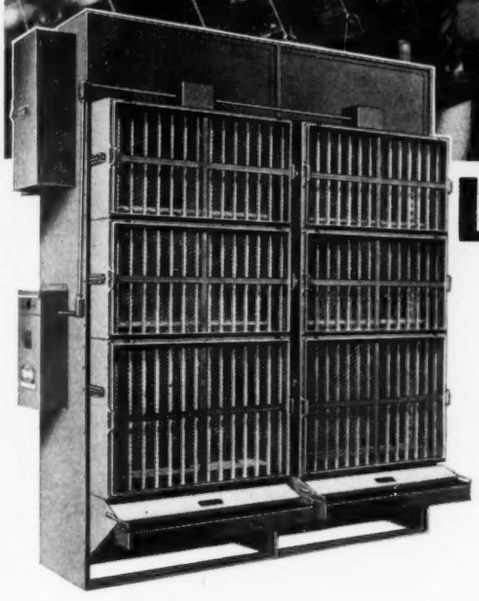
The weight of the unsized warp is obtained by subtracting the result obtained in (7) from the result obtained in (2). The weight of sized warp is obtained by subtracting (4) from (6). Since the unsized warp has been made in a conditioned room, the rayon will have the regain usual for the relative humidity of the warping room. From this can be calculated a "bone dry" weight, which does not change during slashing. The weight of the sized warp is the sum of this "bone dry" weight plus the total weight of size on the warp plus the weight of moisture in the sized warp. The total weight of size is determined by multiplying the per cent size by the "bone dry" weight of the warp. The weight of moisture is found, therefore, by subtracting weight of size and "bone dry" weight from weight of sized warp.

All weighings should be made on the same scale to 0.1 lb. The warp should be weighed immediately after warping and slashing. The values obtained are usually accurate to 1% regain. Variations in the relative humidity of the warping room from 65 to 70% r.h. do not cause a change of more than 1% in the regain values.

YOU KNOW HOW TO HANDLE THIS —

But

WHAT ABOUT LOSSES CAUSED BY *Dust, Smoke and Soot?*



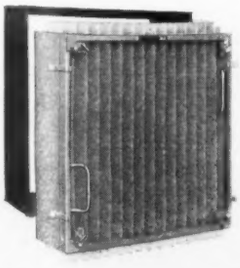
DYEING, BLEACHING, FINISHING and DRYING operations must be protected from smoke, soot, and dust, to avoid expense and losses due to streaking and discoloration.

Many plants are installing American Air Filter equipment to guarantee clean filtered air to all operations demanding absolute cleanliness.

AAF engineers are available without obligation to analyze your air filter problem and recommend a solution. Please write for the address of our nearest engineer.

ELECTRO-MATIC AIR CLEANER

Combines electric precipitation as an integral part of an automatic air filter, for highest cleaning efficiency with smoke and fine soot particles. This is the only electrostatic filter on the market that is self-cleaning and can be operated continuously over long periods without interruptions or shut downs for maintenance.



TYPE PL FILTER

For smaller installations, Dry type, easily maintenanced, and approved by the Underwriters Laboratories. Eliminates practically all dust and some smoke from the air.

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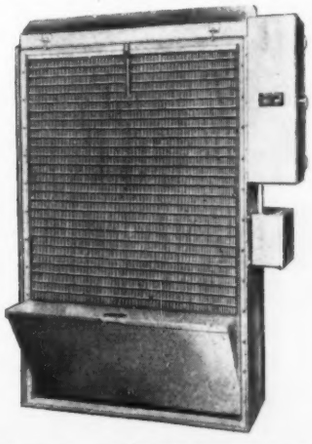
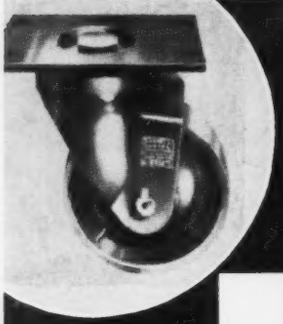


MULTI-PANEL AUTOMATIC

The Multi-Panel filter has been proved in principle and performance by years of Service in industrial and ventilating use. Particularly suitable where large volumes of air are to be conditioned and normal cleaning efficiency is adequate. Positive self-cleaning feature places operation on purely mechanical basis, assuring maximum effectiveness and eliminating practically all maintenance. Available in a wide variety of sizes and capacities.

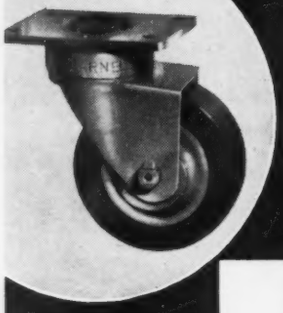
AIR FILTRATION AAF DUST CONTROL

Darnell
CASTERS & WHEELS



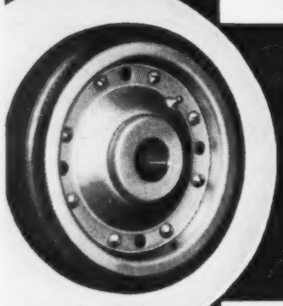
SAVE
MONEY....
A saving at every turn—you're in the money right from the start with Darnell

Darnell
CASTERS & WHEELS



SAVE
FLOORS....
Darnell Casters and Wheels reduce the overhead that is underfoot. Kind to floors.

Darnell
CASTERS & WHEELS



SAVE
EQUIPMENT....
Prevent wracking of equipment. Darnell Casters will always swivel and roll

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SAVE
TIME....
Increase efficiency—eliminate that afternoon "lag" of employees. Specify Darnell

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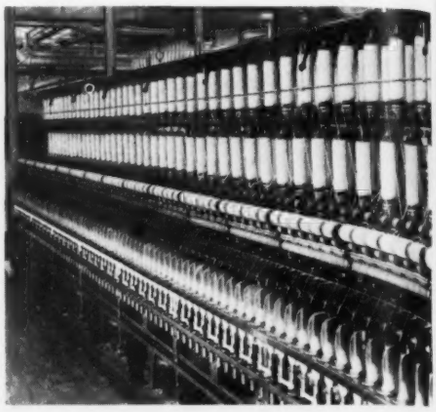
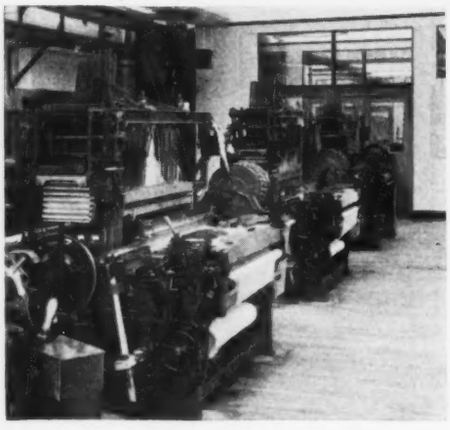
Views in New Textile Unit

of American Viscose Corp.

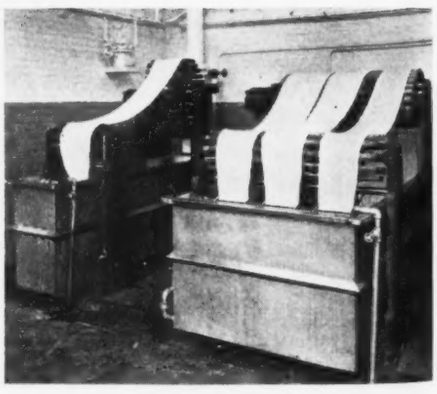
One of four set-ups for spinning rayon staple fiber

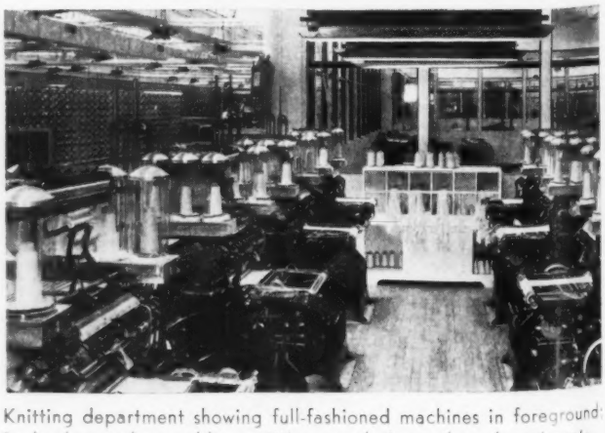




Some of fourteen looms of various types

Dyehouse equipment includes reel dyeing machines





Knitting department showing full-fashioned machines in foreground; in background movable partitions enclosing other departments

INCREASE PRODUCTION... CUT DOWN THREAD BREAKAGE with the high speed SINGER 400W1

Exclusive Singer Double Rotary Thread Take-up

The new high speed Singer 400W1 is the first and only single-needle lock stitch machine with the Double Rotary Thread Take-Up.

This exclusive Singer feature will increase production and cut down thread breakage because it makes possible the handling of even the most delicate thread at speeds up to 5000 stitches per minute.

Let us prove the efficiency of the Singer 400W1 in your own plant on your own work. Contact the nearest branch of the Singer Manufacturing Trade Department for a test machine, or mail the coupon for complete information. There is no charge or obligation.

Features of the high speed Singer 400W1—

- Anti-friction ball and roller bearings
- Smoother and quieter running rotary motion
- Ease of threading and lubrication
- Compact and rigid feed mechanism
- Positive stitch length control
- Simplicity of design and fewer moving parts

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149 Broadway, New York, N. Y.

Branches in all Principal Cities

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SINGER SEWING MACHINE CO.
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149 Broadway, New York, N. Y.

Please send complete information about the New Singer 400W1 to:

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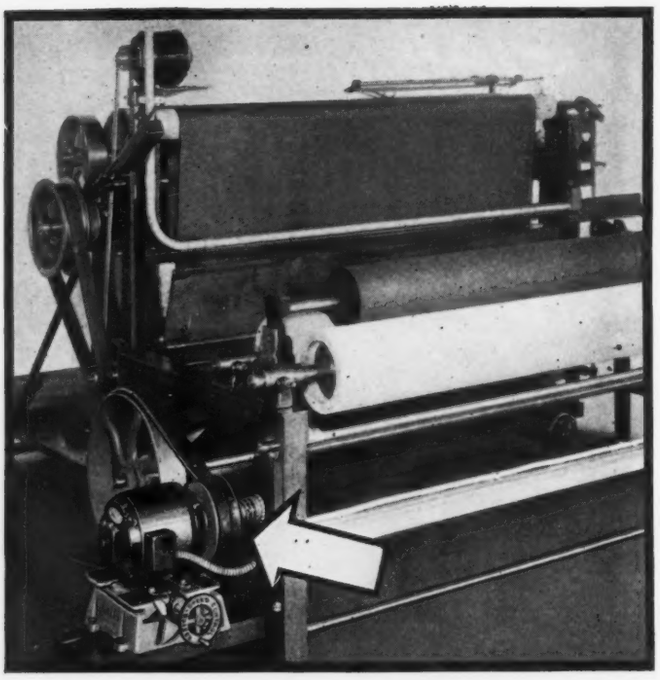
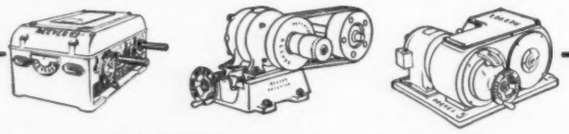


INCREASE PRODUCTION
From Textile Machines

Here's How! Accurate, positive, infinitely Variable Speed Control, always important in many textile processes, has become even more essential under the demands for increased production and new fabrics due to changing world conditions. Machines such as the Windle Rolling and Measuring Machine, shown here, will prove their greater value because foresighted manufacturers have provided maximum adaptability with REEVES Speed Control as standard equipment.

Look for the familiar REEVES Speed Control handwheel on any new machine you consider buying. Now standard equipment on most leading makes, assuring absolute dependability and satisfaction in speed adjustability. Same units may be installed on machines in service. Send for Catalog G-397, containing many installation examples.

REEVES PULLEY COMPANY, *Dept. W,* **Columbus, Ind.**



Left to right: **TRANSMISSION** provides infinite speed adjustability over wide range, 2:1 to 16:1 inclusive; modern, compact, open and enclosed designs . . . **VARI-SPEED Motor Pulley,** simple, direct drive for requirements from fractional to 15 H.P.; not exceeding 3:1 range . . . **MOTODRIVE** combines motor, speed varying mechanism and reduction gears.

Reeves Speed Control

Wool Labeling Bill

And other Washington News

(Continued from page 75) minimum for the seamless branch of the hosiery industry brought wage increases to an estimated 30,000 of the 60,000 workers.

(5) Amended regulations for hosiery learners make minor revisions in training periods, but the pay scale, 22½ to 35¢ per hr., remains the same. Outstanding certificates permitting employment of learners, which would have expired Sept. 18, are extended 60 days to holders who apply in order that renewals may be made without disruption of employment.

CONSCRIPTING INDUSTRY: Nearly all industry, and most opponents of the New Deal, viewed as a threat a proposal in the conscription bill to force manufacturers to cooperate in defense production. The Senate version of the bill would permit the Government to condemn factories and take them over if the owners refused to cooperate. The House substitute amendment would empower the President to place orders with any company, and, if the company refused to furnish the supplies at prices considered reasonable by War or Navy Secretaries, the President could take immediate possession of the plant. Owner would be subject to imprisonment and heavy fine, but would be paid a "fair and just" rental while the plant was used by the United States. At this writing it was unknown the final form of this legislation.

COTTON PRODUCTS SUBSIDY: In an effort to stimulate American exports of cotton goods to Latin America and thus offset trade losses in other quarters of the globe, the Department of Agriculture increased rates of payments under its cotton products export subsidy program, effective Aug. 26.

The new rates are as much as 350% greater than those prevailing since Jan. 1 of this year when funds for continuing the program ran low and the rates were reduced; and as much as 80% greater than those prevailing last year.

Three new classes of textile products were added to the list on which subsidies are being paid, while no subsidy was provided on card strips, comber waste and unbatted cotton as part of a cotton product.

Department officials said that while no funds are available for payments on exports of raw cotton, continued efforts will be made to expand further domestic outlets.

COTTON LOAN RATE: The new Federal cotton loan rate, which averages less than ¼¢ a pound increase over the 1939 rate, was in line with expectations and represented a victory by the business men in the Commodity Credit Corp. over the price-pegging officials in the Agricultural Adjustment Administration. With the loan level slightly below cotton prices, a steady flow of "free cotton" is anticipated. Estimates, however, vary as to the amount of cotton which must eventually go into loan this year. Private shippers have placed the figure as high as 4,000,000 bales although Federal authorities figure nearer 3,000,000 bales.

ONE-VARIETY COTTON PLAN: In renewing its one-variety cotton improvement program for the third crop year, the Department of Agriculture is expanding the scope of the plan to make selected cotton available to domestic as well as foreign spinners.

INSULATION QUOTAS: Because manufacturers fell far short of attaining the production quota under the original cotton insulation program of the Department of Agriculture, the time of the program has been extended until June 30, 1941.

Fashions by MOLNAR

Quality by SCOTT

In everything worn by the modern girl, Standards of Quality are set and maintained by the use of *Scott Testers.

Leather in shoes, yarn in hose and underwear, rubber thread in girdles, yarn and finished fabric in outer garments — for each purpose *Scott Testers provide physical test apparatus approved by major Engineering and Testing Societies and recognized as Standard the world around.

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THE STANDARD OF THE WORLD

And Now

SPUN RAYON

The unique principle of yarn conditioning which The Industrial Dryer Corporation introduced to the textile industry some years ago (namely, the use of an extremely fine water vapor which promptly penetrates the fiber) has been applied successfully, as most of the industry knows today, to the twist-setting and conditioning of

Silk, Wool, Cotton and Filament-Rayon Yarns

We are pleased, and we believe the industry should be pleased, to know that the "H-W" Conditioner, which has proved such a boon to

mills on the older yarns, has demonstrated itself as fully capable of solving, without difficulty, the conditioning problems of

Spun Rayon

Not that we anticipated any trouble in solving them. As a matter of fact, we fully expected that a machine which had introduced to yarn conditioning the acme of uniformity and the finest delicacy of treatment (rapid action at low, unharmful temperature) would be just the thing for a yarn so sensitive to the influence of moisture as spun rayon. And so it proved.

Are You Going

on spun rayon or rayon mixtures? If so, adopt the "H-W" Conditioner to avoid soft and easily stretched yarn, hard and brittle fiber, sloughing off, and the necessity for excessive and damaging tension in the shuttle. The "H-W" means better yarn, better weaving efficiency, better cloth, better customer satisfaction.

Features of "H-W" Conditioner

"H-W" means no free moisture, no condensation drip, Bristol controlling and recording hygrometer, time clock, motor drive, Monel Metal or stainless-steel lining, welded steel frame, Johns-Manville asbestos-board covering, Fiberglas insulation, nickel-clad steel floor. The machine handles any package, tray, or truck.

THE INDUSTRIAL DRYER CORPORATION
STAMFORD, CONN.

NEWS ABOUT MEN

J. H. McEwen is president of the May Hosiery Mills, Inc., Burlington, N. C., following the merger of that concern with the McEwen Knitting Co. **H. M. Kizer** is vice-president, **B. V. May** is treasurer, **Ralph Holt** is secretary and **W. H. May, Sr.,** is chairman of the board.

Milton H. Rubin, formerly vice-president of American Silk Mills, New York, has been elected president. **Harold Rubin,** treasurer, has been elected vice-president, at the same time retaining the treasurership.

Ely R. Callaway, of Callaway Mills, LaGrange, Ga., has been appointed chairman of the Textile Industry Committee of the National Association of Credit Men.

Senator G. Imai, of Japan, president of Katakura & Co., heads a delegation of silk leaders which is now on a visit to this country.

T. A. Law has succeeded **Bland Smith** as president of Brenham (Tex.) Cotton Mills.

C. M. Bassett succeeds **J. K. Whitaker** as president of the Lone Star Cotton Mills, El Paso, Tex. **R. L. Sanford** has been promoted from superintendent to vice-president and general manager.

J. E. Sirrine, Greenville, S. C., head of J. E. Sirrine & Co., textile and industrial engineers, and first vice-president and chairman of the board of the Brandon Corp., Greenville, has been appointed by Governor Burnet R. Maybank as a member of a committee of five to assemble data regarding the State of South Carolina which might prove useful to Federal authorities as they expand the national defense program.

Arthur Besse, president of National Association of Wool Manufacturers, has resigned his post as member of the textile division of National Defense Commission, Washington, D. C.

Francis T. Madden of Boston was elected chairman of the Board of Trustees of Lowell (Mass.) Textile Institute last month. Mr. Madden has been on the selling end of the textile industry for the last 20 years and represents McCampbell & Co. and other firms in New England. **Harold V. Farnsworth** of Boston succeeds Mr. Madden as vice-chairman.

H. Beekman Schaefer and **Ivey Cowan** have been made directors of Stonecutter Mills Co., Spindale, N. C.

DONALD M. COMER, Avondale Mills, Alabama, has been appointed by the Secretary of Commerce to serve out the unexpired term of the late Stuart W. Cramer as a director of the Textile Foundation. Those composing the present Board, in addition to Mr. Comer, are Franklin W. Hobbs, Boston, Mass., chairman; Frank D. Cheney, Manchester, Conn.; the Secretary of Commerce; and the Secretary of Agriculture.

Charles F. Goodman, superintendent and vice-president of American Finishing Co., Memphis, Tenn., has been named president of the company.

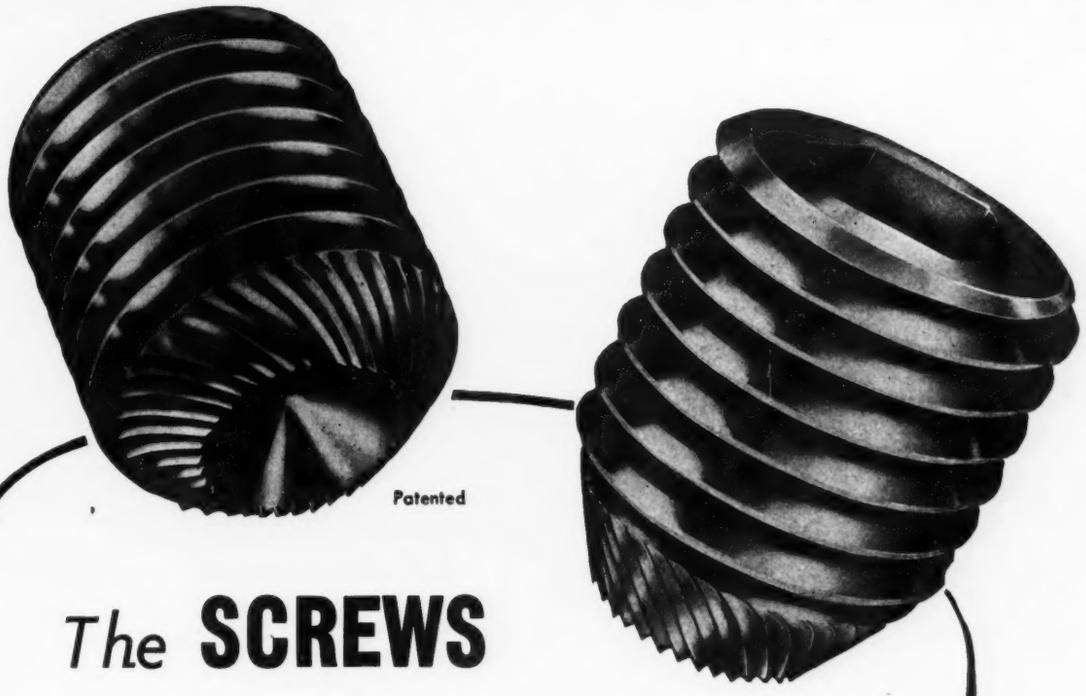
Brown Mahon, assistant general manager of Dunean Mills, Greenville, S. C., has been appointed chairman of the textile division of the fourth annual safety conference in Columbia, S. C.

Among the speakers at the annual meeting of the Tufted Bedspread Manufacturers Association at Dalton, Ga., were **Col. W. D. Anderson,** president of Bibb Mfg. Co., Macon, Ga.; **George W. Henderson** of Trust Co. of Atlanta, Ga.; and **T. M. Forbes,** secretary, Cotton Manufacturers Association of Georgia.

H. S. Adams, Chester, S. C., assistant treasurer of Springs Cotton Mills, on Aug. 17, was presented with a 25-year service pin.

Leonard H. Mellor, of Bay State Textile Co., Fall River, Mass., has been elected president of the Textile Associates, an organization of textile executives of Southern New England.

C. F. Woodward, secretary-treasurer of Grout's Ltd., St. Catharines, Ont., since the firm was founded in 1924, has been appointed managing director of Grout's Ltd. and Val-



The **SCREWS** Manufacturers prefer today

UNBRAKO

SELF-LOCKING HOLLOW SET SCREWS

With the Knurled Points

Just set them up with no more than average effort, and the ingenious knurled cup points automatically lock into place with vibration-defying tenacity. Once in place, "Unbrako" Self-Lockers simply can't rattle loose no matter how severe the unwinding tendency. They *stay set!*

And this *unfailing ability to stay set* insures freedom from the common and expensive troubles caused when ordinary set screws work loose. Equip with "Unbrako" Self-Locking Set Screws and you'll enjoy trouble-free operation of your machinery . . . you'll enjoy the savings in maintenance costs they permit.

Remember too, that, in spite of their grip when in place, "Unbrako" Self-Lockers are easily applied, as easily adjusted or removed, and they can be used over and over again indefinitely—always with the same dependability.

Maintenance men in some of the largest and best known textile mills in the country think so highly of the "Unbrako" Self-Locking Set Screws that they are now using no other. Why not send in for catalog and samples?—discover how easy it is to cut down your own maintenance costs and prevent breakdowns by specifying "Unbrako".

STANDARD PRESSED STEEL CO.

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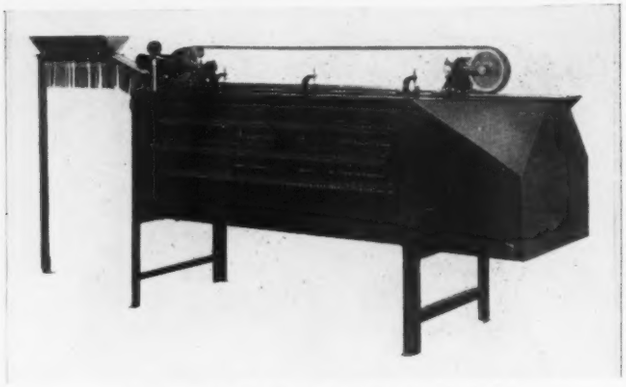
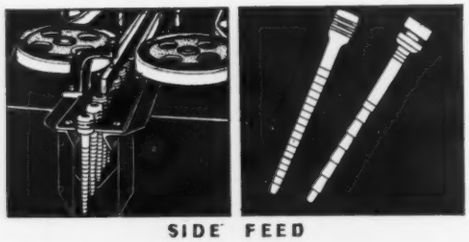
FOR RAYON AND SILK

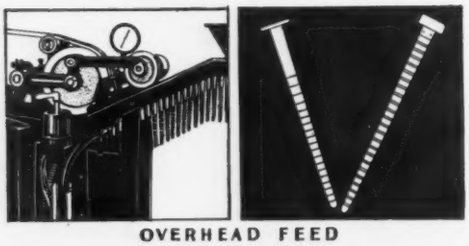


THE TYPE L LOOM BOBBIN CLEANER

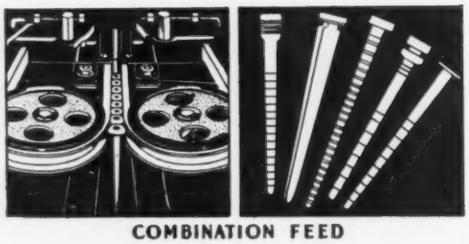
Adaptable to Your Needs



SIDE FEED



OVERHEAD FEED



COMBINATION FEED

With the aid of the three feeding mechanisms, shown above, the New Type "L" will clean a wide variety of Rayon and Silk quills at a surprisingly high rate of speed. Let us make a test on your bobbins and prove that the machine is not only adaptable to your needs, but that it offers the most efficient and economical method of bobbin cleaning known to the industry.

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The Terrell Machine Co., *Inc.*

CHARLOTTE, N. C.

Luther Pilling, Danielson, Conn.—N. E. & Canada
E. W. S. Jasper, Elizabeth, N. J.—Penn. & N. J.
Geo. Thomas & Co., Ltd.—Manchester, England

NEWS ABOUT MEN

leyfield Silk Mills Ltd., Valleyfield, Que. **Emil Staub,** for the last few years head of the weaving department at Valleyfield, has been appointed mill manager of both Ontario and Quebec mills.

Robert R. West, for eight years president of the Riverside & Dan River Cotton Mills, Danville, Va., has been appointed director of the Bureau of Industrial Research, recently established at the University of Virginia, Charlottesville, Va. He will take over his duties Sept. 15. President John Lloyd Newcomb, of the university, stated that they were "fortunate in having secured the services of a man of such broad experience for the position of the director of the Industrial Study of Virginia." After Mr. West has conducted a survey of the predominant industries of Virginia, the university hopes to offer advice to Virginia communities in the way of the establishment of industries that will utilize their surplus natural resources and their surplus labor. The establishment of this Bureau of Industrial Research has been made possible by a grant of $48,800 from the General Education Board to the University of Virginia over a four-year period.

Elliott J. Neal has been appointed vice-president in charge of sales in the southern territory by Aberfoyle Mfg. Co., Philadelphia. His new headquarters will be at the Belmont, N. C., plant of the company.

W. Wood Smith has been elected president of the American Multiple Fabric Co., Providence, R. I., and **Chester H. Vale,** treasurer. They succeed the late A. A. Wilkinson who filled both offices for the last 20 years.

Donald Comer, chairman of the board of Avondale Mills, Sylacauga, Ala. has been appointed by the governor of his state to head the "Decade of Progress" campaign in Alabama. This campaign is sponsored by the Southern Governors Conference.

Walter H. Langshaw, a retired New Bedford manufacturer, and head of the Dartmouth Mfg. Co. up to the time of its liquidation, has cabled a contribution of $25,000 to the British War Relief Fund. Mr. Langshaw is now 81 years old.

E. W. Nimms, manager of the Jackson County Woolen Mills, Moss Point, Miss., has resigned to accept a similar position in Philadelphia.

Frank Mitchell, for the last 12 years in charge of the Chicago office of Deering, Milliken & Co., will retire from business at the end of September, to be succeeded by his assistant, **George Horath.**

Solon E. Summerfield, founder, chairman and largest stockholder of Gotham Silk Hosiery Co., New York, is retiring from active officership in that company as of Sept. 15, but will continue as member of the board. He will leave shortly for a rest in Colorado and on his return will open a private office at 30 Rockefeller Plaza, where he will supervise his personal holding company, the Lawrence Industrial Corp. In 1906 Mr. Summerfield abandoned the practice of law in Denver to enter mercantile business. After 14 months in the ribbon business, he bought two hosiery machines and set up a retail shop back of a cigar store to dispose of his product. By 1912 he had 20 machines and several retail stores. In 1913 annual production was 20,000 doz. prs.; in 1927, the peak year, production was 1,500,000 doz. prs.

Paul F. Davenport has been assigned to cover the New York State territory for Currier & Co., cotton yarns, with headquarters in Amsterdam, N. Y.

Arnold Rawlinson, recently with Pepperell Mfg. Co., has become associated with Deering, Milliken & Co., New York, in connection with the sale of sheets and pillow cases with particular attention to the new Sylvan permanent finish goods.

T. H. ("Worth") Andrews, a member of the sales staff of American Viscose Corp.'s Philadelphia office since 1934, has been transferred to the Vinyon Sales Division, to work with **W. G. Luttge,** division manager. **Eldon Stowell,** of the Sales Development Department, comes to the Acetate Sales Division, to work with **G. L. Storm,** Division Manager.

R. C. Moyer has been made manager, **L. H. Roberts** assistant manager, and **Ralph M. Mallard** superintendent of Linen Thread Co., Blue Mountain, Ala.

J. A. Webber, who has been associated with American Viscose Corp. for 20 years, most recently in the Sales Development Department at Marcus Hook, Pa., has been transferred to the Viscose Sales Division to work with **Wm. D. Benson,** Division Manager.

R. Norman Brown has been appointed manager of Leach Textiles Ltd., Huntington, Quebec, to take the place

They All Benefit—

from the Features of a Mechanical Wonder

THE BOARDERS benefit through the comfortable working conditions provided by the Proctor Automatic Boarding Machines as well as the e-a-s-e with which this equipment enables them to board *more* dozen pairs of hosiery in an 8-hour day and thereby increase their earnings.

THE MANUFACTURER and FINISHER benefit through savings resulting from the maintenance of high quality results at high production in little floor space. Production is limited only by the mechanical speed of 32 dozen pairs per hour on the 2-operator machine for women's hosiery and 52 dozen pairs per hour on the 2-operator machine for men's half hose.

THE SALESGIRL benefits by the unvarying high quality of stockings that have received ideal finishing on Proctor Automatic Machines. Such hosiery's appearance has sales appeal which means more sales. And she may make her sales with confidence in her recommendations . . . with the fore-knowledge that satisfaction to the customer is assured.

THE CONSUMERS benefit by being able to purchase with confidence socks and stockings of manufacturers whose names have come to stand for assured quality . . . the best in appearance and comfort.

Let us send you an interesting and educational booklet—The only complete description of modern scientific boarding.

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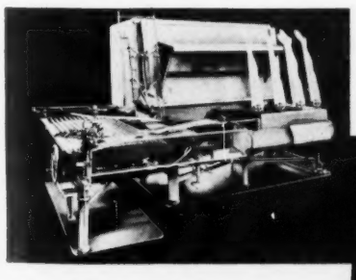
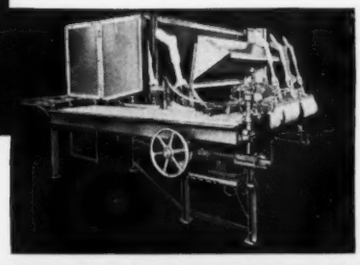
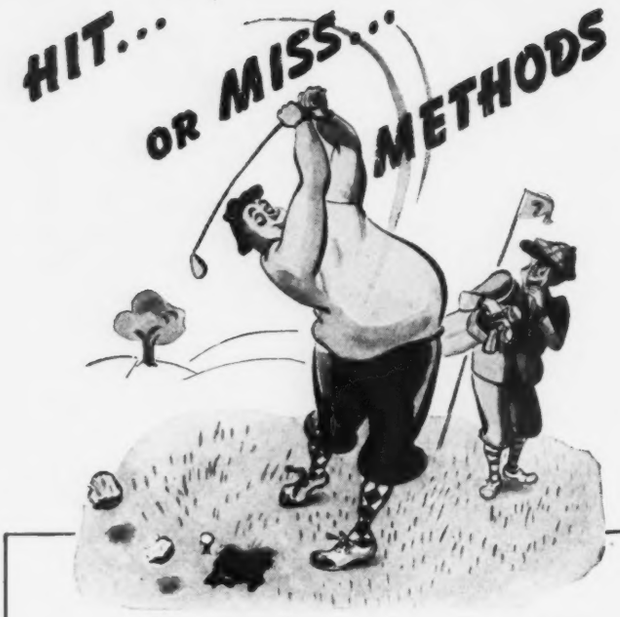


Automatic Machine for Women's Hosiery



Automatic Machine for Men's Half Hose

PROCTOR & SCHWARTZ *Automatic* BOARDING MACHINES



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are often the answer to poor quality textiles

But when you place your order for a Solvay Alkali you are assured of an alkali that will meet all standard high quality requirements in every respect . . . assured that it will *contribute* to the manufacture of high quality textiles.

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The right type of product for your job. Solvay Alkalies are produced in various forms to meet specific manufacturing requirements. The Solvay Products Book will give you complete information on types and strengths of all Solvay Products.

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NEWS ABOUT MEN

of **A. Fawcett,** now president of the newly organized worsted mill of Fawcett & Grant Ltd., Huntingdon, Que. Mr. Brown was formerly chief designer of the Fulton (N. Y.) mill of American Woolen Co.

Robert E. (Bob) Heinl has been appointed in charge of sales for the Belmont (N. C.) Hosiery Mills, manufacturers of men's fancy half-hose for chain store and wholesale trades. Until his resignation, he was assistant vice-president of Meinhard Greeff & Co., principally as Southern representative. His headquarters are now at the New York office of Belmont Hosiery Mills, 93 Worth Street. **S. P. Stowe** is president of the mills and **C. T. Stowe,** secretary-treasurer.

Harold T. Barney has been made superintendent of Danvers (Mass.) Bleachery of Pequot Mills.

M. L. Bales, recently treasurer and general manager of the Ragan Knitting Co., Thomasville, N. C., and connected with that firm since its inception in 1918, has disposed of all his interests in it, and will henceforth devote his time to the Maurice Mills Co., of Thomasville, and the Bales Hosiery Corp., of High Point.

Max B. Mann has joined the organization of Seyer Silk Dyeing & Finishing Co., Haledon, N. J., and will represent that firm in the New York market.

Quinn Goldman, head of the promotion and trade relations department of the men's wear division of Botany Worsted Mills, New York, has resigned.

E. A. Pumphrey has been named vice-president in charge of eastern sales activities of Amazon Knitting Co., Muskegon, Mich. Mr. Pumphrey heads the firm of E. A. Pumphrey & Co., which also sells for the Elmira Knitting Mills and the United Underwear Mills.

James D. Howard has resigned from Abbott Worsted Sales, Inc., New York. **Rupert W. Smith,** of Wilton, N. H., is now in charge of the Abbott New York office.

Bernard Gutmann, for a number of years in the New York textile market, has established his own converting firm under the style Bernard Gutmann Co., which will handle rayon and fine cotton dress and lingerie fabrics.

Harold Rogers has resigned as sales manager of the men's wear division of Schwarzenbach, Huber & Co., New York.

Robert E. Heinl, in charge of sales, Belmont Hosiery Mills

L. E. Rickard has been promoted to superintendent of carding at Martinsville (Va.) Cotton Mills, and **Roger Young,** formerly with Barber-Colman Co., is now superintendent of the cloth room of those mills.

Garland W. Ledford is now overseer of the cloth room of the Gayle unit of Springs Cotton Mills, Chester, S. C., succeeding **W. M. James,** who has accepted a similar position with Highland Park Mfg. Co., Charlotte, N. C.

H. B. Miller, superintendent of Florence Mills, Greenville, S. C., is now manager.

E. J. Boswell has been made superintendent of Belton (S. C.) Mills.

S. P. Jenkins has been made superintendent of Payne, Ga., unit of Bibb Mfg. Co.

A. F. Bell has become superintendent of High Point (N. C.) Weaving Co.

Robert Newell is now superintendent of weaving at Ashland Corp., Jewett City, Conn. He was recently employed at Burlington, Vt.

William F. Brosnan, former superintendent of dyeing at Farr Alpaca Co. has been named superintendent of dyeing at American Thread Co., plant at Fall River, Mass.

W. A. Leek, manager of the special fabrics department of the cotton men's wear division, Pacific Mills, New York, will also head the bleached goods department.

W. L. Dillmuth, for some years manager of Department 17 in the rayon women's wear division, Pacific Mills, New York, has resigned. He is succeeded by **Winfield F. Buckingham,** who has been with Pacific Mills for eight years.

Alfred Peever, sales manager of Hetherdell Woolen Co., New York, has resigned that connection. He is also vice-president of the Agawam Wool-

IT'S ALWAYS HIGH NOON

when we test the light-fastness of **NATIONAL PRINTING VATS**

Manufactured sunlight glares with intensity on swatches to pre-test the light-fastness of the goods you print with *National Vat Colors.* National thus test-checks every color to be certain that its fastness meets or surpasses all accepted standards.

National Printing Vats disperse instantly and are your assurance of crisp, sharp prints that are true-to-shade in every fine line and stipple of the printing roll. They can always be depended upon to meet or surpass every modern color-fast standard.

Attached to each principal National Sales Office is a National Textile Service Laboratory having an unequalled accumulation of test work and technical data. We invite you to use this nearby technical service.

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PROVIDENCE	15 Westminster St.	CHARLOTTE	201-203 W. First St.	CHATTANOOGA	James Bldg.
CHICAGO	357 W. Erie St.	GREENSBORO	Jefferson Standard Bldg.	PORTLAND, ORE.	646 N. Thompson St.
PHILADELPHIA	200-204 S. Front St.	ATLANTA	140 Peachtree St.	TORONTO	137-145 Wellington St., W.

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A soluble worsted oil possessing many unusual advantages:

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2. Ideal for dry spun yarn, and all types where the oil remains indefinitely in the finished goods.
3. Soluble in all proportions in water—no emulsifying agents necessary.
4. Forms a stable emulsion—no tendency to turn rancid, discolor or leave odor.
5. Always uniform—not subject to world market variations or crop conditions.

SULFOL 200 is a worthy addition to the premier line of conditioning oils marketed by Houghton over the past half-century. In your production it can be most helpful —will you test it? Ask the Houghton Man, or write—

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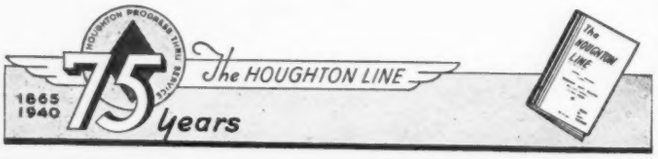

HOUGHTON TEXTILE OILS

NEWS ABOUT MEN

en Co., and will devote his entire attention after Sept. 1 to that concern.

John Black, of Martin Weiner Co., New York is now associated with Pacific Mills, New York.

Lawrence Sizer, formerly of N. W. Ayer & Son, has been appointed advertising manager of the retail stores of Marshall Field & Co., Chicago.

Fred L. A. Gardner, for five years with LeSur, Inc., New York, American selling agents for LeSur, the French novelty fabric firm, has started business on his own account for reproducing in limited quantities fabrics similar to those formerly imported from France. He has two small mills identified with him in this enterprise.

Worth Burrell, engineer at Berkshire Fine Spinning Associates, Fall River, Mass., has been elected to the board of trustees of the Bradford Durfee Textile School. Also so elected are **Roy A. Jenkins,** superintendent of Pilgrim Mills, **F. Lincoln Dunlap,** assistant agent for Pepperell Mfg. Co., and **Edward Doolan,** treasurer of the T. W. U. A.

Ralph Davis has become superintendent of the Russellville, Ala., plant of Alabama Mills, succeeding **J. E. Bostick.**

Claude Taylor, for the last 10 years with Arlington Mills, Lawrence, Mass., has been appointed head designer of the Berkshire Woolen Co., Pittsfield, Mass. He succeeds **John Peary,** who has resigned to accept a position in Maine.

J. M. Cathcart is the new superintendent of Courtenay Mfg. Co., Newry, S. C. He was formerly purchasing agent of Grendel Mills, Greenwood, S. C., and other mills in the J. P. Abney group.

W. L. Clement has assumed his new duties as superintendent of the Laurens (S. C.) Cotton Mills.

Allen Dyson, former superintendent of Sanford (N. C.) Cotton Mills' cloth room, has joined Dallas (Tex.) Cotton Mills in a similar capacity.

W. C. Neely succeeds **W. C. Oxley** as secretary of the Clinton (S. C.) Cotton Mills.

Donald McMahon is now superintendent of Peerless Woolen Mills, Rossville, Ga.

Walter Holdsworth has retired as superintendent of Somersworth Textile Co., N. H., after 38 years' service in the industry.

C. J. Meagher has been made superintendent of Nokomis and Erlanger Cotton Mills Co., Lexington, N. C., succeeding **Robert H. Hope,** who resigned to become assistant superintendent of Mayfair Cotton Mills, Arcadia, S. C.

E. O. Defore has been made superintendent of engineering of Callaway Mills, LaGrange, Ga.

H. S. Price has been made superintendent of Dadeville, Ala., unit of Alabama Mills suceeeding **W. E. Williams.**

Charles Y. Hall succeeds **J. D. Head** as superintendent of Caroline Mills, Enterprise, Ala.

D. H. Morris has been made superintendent of Bama Cotton Mills, Enterprise, Ala., succeeding **C. E. Davis.**

P. A. Gwaltney, manager of Plymouth Mfg. Co., McColl, S. C., has resigned.

Robert Newell, formerly with Queen City Cotton Co., Burlington, Vt., has recently joined the Ashland Corp., Jewett City, Conn., as superintendent of weaving.

R. V. Martin is superintendent at the newly established elastic webbing mill of Martin Bros., Middlesboro, Ky.

C. R. Moore has become general superintendent of the spinning department of Harmony Grove Mills, Commerce, Ga.

R. E. Johnson, for several years recreational supervisor at Old Hickory (Tenn.) Rayon Plant of E. I. du Pont de Nemours & Co., has been appointed assistant safety supervisor. In his previous position he is succeeded by **C. R. Batey.**

Dee Ellison has become purchasing agent of Grendel Mills, Greenwood, S. C., and other mills in the J. P. Abney group.

Homer Roberts is the new superintendent of the Wetumpka plant of Alabama Cotton Mills. He succeeds **W. G. Stainton.**

C. A. Beckwith has become superintendent of the new Continental Hosiery Mills, Henderson, N. C.

William Candler has succeeded **H. P. Thomas** as superintendent at Villa Rica (Ga.) Mills. Mr. Thomas has been made superintendent of Piedmont Cotton Mills, Egan, Ga.

W. E. Rambow has become superintendent of Vaucluse, S. C., unit of Graniteville Mfg. Co., succeeding **J. T. Rogers.** He was formerly superintendent of Enterprise Mills, Augusta, Ga.

ARE WE USING THE MOST EFFICIENT KIER-BOILING FORMULA?

CAN WE IMPROVE WHITENESS?

ARE WE GETTING MINIMUM TENSILE STRENGTH LOSS?

HOW CAN WE SECURE MAXIMUM ABSORBENCY?

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T-5

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He had always been about as good as they come but the management didn't realize he was working under the handicap of an unsatisfactory water supply. Sometimes the whites were off: colors didn't match: re-dyes were necessary and spoilage cut into net profits not to mention the excessive use of soaps, oils, detergents, etc., used to help counteract poor water . . . *But now things are different!* Since his insistence on a

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WATER PURIFICATION PLANTS DESIGNED
INSTALLED *and* GUARANTEED
CLAYTON, NEW JERSEY

NEWS ABOUT MEN

W. E. Scholer has joined the staff of the Fabric Development Department of American Viscose Corp. in New York as technician. For the last five years he has been on the technical staff of Stehli & Co., and, since 1937, in charge of neckwear.

K. A. Richardson has become a member of the engineering department of Bibb Mfg. Co., Macon, Ga.

E. E. Finley has resigned as overseer of weaving at Pilot Mills, Raleigh, N. C., and has become associated with Erlanger Cotton Mills, Lexington, N. C., in a similar capacity.

C. W. Bendigo, superintendent of High Point (N. C.) Weaving Co., has resigned to become superintendent of throwing and preparation at Dunean Mills, Greenville, S. C.

Dan R. Johnson has become superintendent of the cotton mill at the State Penitentiary at Nashville, Tenn., succeeding **S. L. Carter.**

G. W. Carte, superintendent of Yadkin, N. C., plant of North Carolina Fabrics Corp., has been promoted to vice-president and general manager. **Reid Tull** has been named plant superintendent.

T. E. Marshall has been elected secretary of Rocky Mount (N. C.) Cotton Mills, succeeding **Turner H. Bunn.**

E. W. Blombach has become manager of Minnewawa Mfg. Co., Knoxville, Tenn., recently established for manufacture of woven labels.

J. S. Chaya has been elected superintendent of Blackstone (Va.) Weaving Co., succeeding **F. J. Archelman,** resigned.

R. H. Archer has become office manager of Randleman (N. C.) Full-Fashioned Hosiery Mills.

Charles Salzenburg has become superintendent of Schwartzenbach Huber Co., Front Royal, Va., succeeding **Ralph Carter.**

Donald Carroll has become technical advisor at Winnsboro (S. C.) Mills, unit of United States Rubber Products, Inc.

W. Reed Godfrey has become assistant overseer of spinning at Hamrick Mills, Gaffney, S. C. He was formerly an erector for Abbott Machine Co., and Barber-Colman Co.

Avondale Mills, Sylacauga, Ala., recently announced the following changes in personnel: Effective Sept. 1, **Darden Hampton,** formerly of Chattanooga, Tenn., took over the Carolinas - Virginia territory; **Paul Davenport** succeeded the late Fred S. Fowler as representative in the up-state New York area; **S. E. Fulton,** in Philadelphia, and **Frank W. Sundberg,** in Reading, Pa., are now looking after the Philadelphia market area formerly handled by Mr. Davenport.

L. E. Bagwell, formerly of Drayton (S. C.) Mills, has become assistant superintendent of Avondale Mills, Birmingham, Ala.

J. W. Proctor, formerly of Mooresville, N. C., has become superintendent of the No. 1 plant of Harriet Cotton Mills, Henderson, N. C.

C. S. Howard has been promoted to overseer of weaving at Pilot Mills, Raleigh, N. C.

R. P. Bible has become local manager of Morristown Knitting Mills, Dandridge, Tenn.

Chris E. Folk, for seven years superintendent of the Duchess Fabrics Corp., a unit of Burlington Mills Corp., Statesville, N. C., has resigned and gone to Charlotte, N. C., where he has entered other work.

John G. Chapman, has resigned as general manager of Samoset Mills, Talledega, Ala.

J. R. Copland has resigned as general superintendent of Virginia Mills, Inc., Swepsonville, N. C., after having been in the textile business for 52 years.

Stanford McDowell has become superintendent of O. E. Kearns & Sons, High Point, N. C.

Alvin B. Shepherd has become office manager of Alamac Hosiery Co., Reidsville, N. C.

George Farrell has become manager of the recently established Terra Alta (W. Va.) Hosiery Mill.

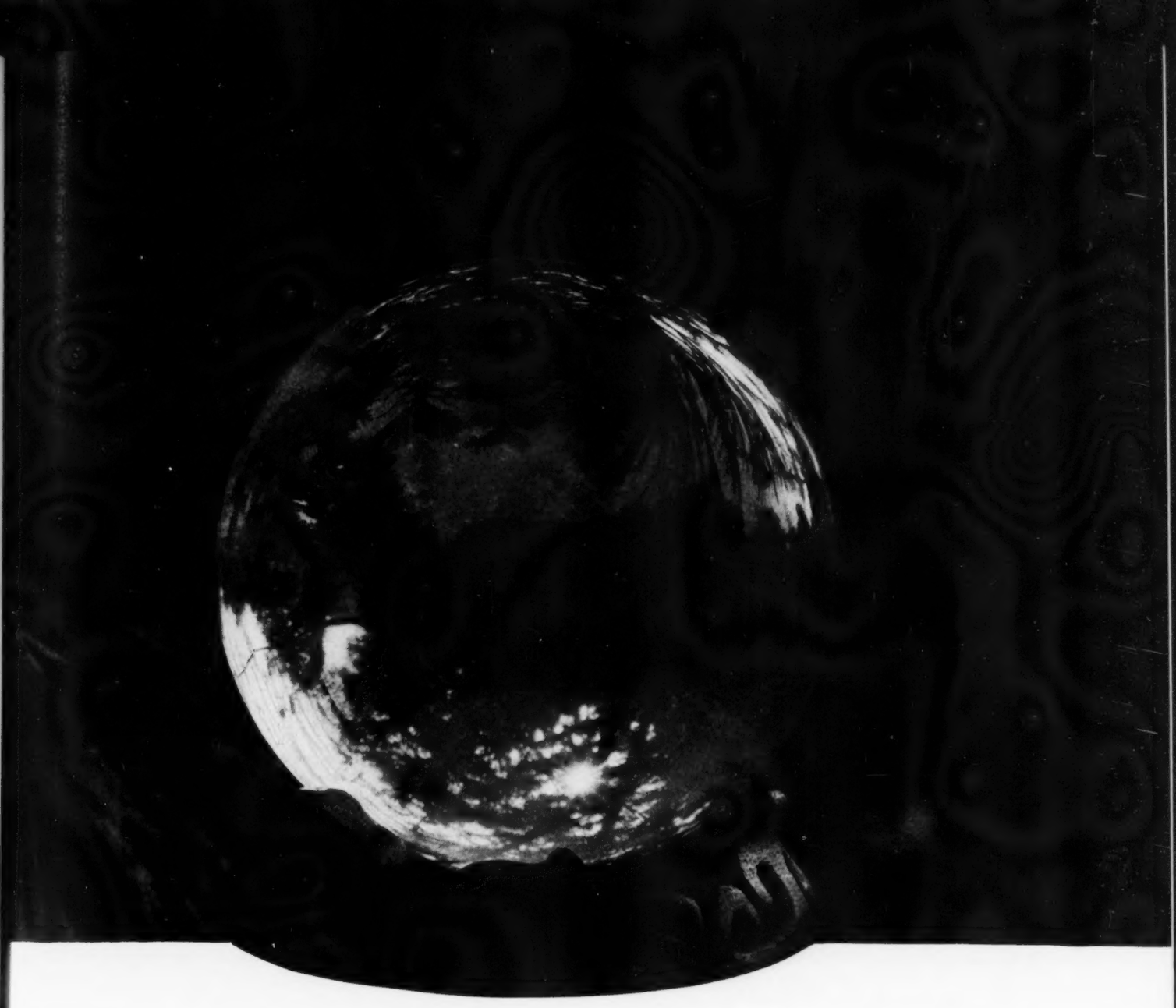
R. C. Gary has become manager and superintendent of Continental Hosiery Mills, Hendersonville, N. C.

Lloyd Beacham is the new superintendent of Houston (Tex.) Cotton Mills.

James Mair, of Philadelphia, Pa., has become superintendent of Penderlea Mfg. Co., Willard, N. C.

Ralph Pope has become superintendent of Lucky Stripe Silk Stocking Co., Fitzgerald, Ga.

M. W. Parks, superintendent of Avondale Mills' Eva Jane plant and a group of other mill people, left Sylacauga Aug. 2 for an 18-day trip through the West. The party traveled in an Avondale Mills' bus and visited Salt Lake City, Yosemite Park, the Grand Canyon, Hollywood, the Rose Bowl, etc.



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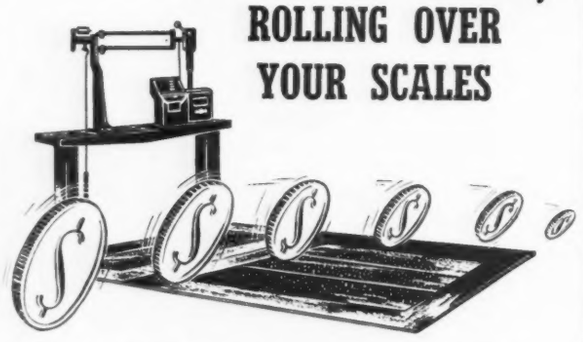

Throughout your mill, from receiving through production and out the shipping door, every time a pound of your product passes a strategic weighing point, you roll real money over your scales. Modern Howe Scales, long-lived with low cost maintenance for accuracy (from 1/64 oz. to 30 tons) protect you against costly losses. Write today for new folder, "Howe Scales for Every Weighing Purpose." The Howe Scale Company, 603 Scale Avenue, Rutland, Vermont.

HOWE SCALES

FOR EVERY TEXTILE PROCESS
PLATFORM AND COUNTER SCALES
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DORMANT DIALS AND WEIGHTOGRAPHS

tendent of Bevelle unit of Avondale Mills, Alexander City, Ala.

John Cumnock, formerly superintendent of Warrenville, S. C., unit of Graniteville Mfg. Co., has become associated with Borden Mills, Kingsport, Tenn., in a similar capacity.

Edd Blackwood has resigned his position with the White Oak unit of Cone Mills, Greensboro, N. C., and has become overseer of spinning at Dallas (Tex.) Cotton Mills.

Ralph N. Mallard has become superintendent of Linen Thread Co., Blue Mountain, Ala.

W. C. Bowden, formerly night superintendent of Brazos Valley Cotton Mill, West, Tex., has been promoted to superintendent of the company's twine mill at Waco, Tex.

Obituary

Sidney Borden Paine, 84, retired manager of the mill power department of the General Electric Co., and an internationally known authority on textile plant electrification, died at his home in Auburndale, Mass., on Aug. 15. He was a native of Fall River and became associated with the American Linen Co., Fall River, of which his father, Walter Paine, was treasurer. In 1881 he became connected with the then Edison Electric Co. at Fall River as director of illuminating equipment, being transferred to Boston two years later. About 1885 he was made manager of the New England district of the Edison General Electric Co., and in 1892, with the formation of the General Electric Co., he was made manager of the newly organized mill power department, which he retained until his retirement in 1926. For his pioneer work in textile electrification, including early motor drives of outstanding leadership, Mr. Paine was highly honored. In 1895 he was awarded a medal by the New England Association of Cotton Manufacturers for "improvements in the art of electrical transmission of power."

Sidney B. Paine

James O. Thompson, Jr., 68, former superintendent of Hoosac Mills Corp., New Bedford, Mass., and active in the textile industry in that city and Fall River, Mass., for nearly 50 years, died at his home in New Bedford Aug. 17. At one time he was superintendent of Wamsutta Mills and of Wampanoag Mills. He retired in 1938. He was secretary of the trustees of New Bedford Textile School for 21 years.

John W. Cathcart, 70, formerly secretary-treasurer of the Fairfield Cotton Mills, died Aug. 13 at Winnsboro, S. C. He was president of Merchants & Planters Bank, Winnsboro.

Leonard Kleeb, Jr., 58, manager of the Fall River, Mass., division of Pepperell Mfg. Co., since 1929, died Aug 14. He was a native of Basle, Switzerland. After connection with several prominent mills he joined Pepperell in 1929, revamping the old Granite Mills in Fall River for a Pepperell branch plant.

William McKinley, 72, veteran cotton-textile commission merchant, died Aug. 25 at his home in Monclair, N. J. He spent his entire career with W. L. Langley & Co., of which he was for a long period president.

John Donald Dunlop, 70, president from 1923 to 1937 of the silk manufacturing firm of John Dunlop Sons, Inc., Paterson, N. J., and elsewhere, died last month. The firm was founded by Mr. Dunlop's grandfather 50 years ago and was liquidated in 1937. His home was in South Nyack, N. Y., and he was active in civic and welfare enterprises in Rockland County.

Frank R. Rosso, 48, for the last seven years head of the designing department of Cohen, Goldman & Co., New York, and vice-president of the International Association of Clothing Designers, died Aug. 14.

G. C. Fox, 55, for more than 33 years in the textile

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Anhydrous

General Chemical Glauber's Salt, Anhydrous, analyzes a minimum of 99.5% sodium sulfate. Because of the practical purity and concentration of this grade, its use is preferred by many textile users since it offers definite economies in shipping costs.

- Barrels, net weight—approximately 430 pounds.
- Bags, net weight—approximately 150, 200 and 220 pounds.

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GLAUBER'S SALT, CRYSTAL

in standard and needle crystal grades.

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ALLEN HOLLOW Hex Socket SCREWS FOR TEXTILE MACHINERY

Heads set flush with machine surfaces; no sharp edges to catch fabrics; no slots to burr and pull threads. Strongest, handiest screws to use; hold tight under vibration. Ask for *free samples*—indicate types and sizes wanted. ALLEN MFG. CO., Hartford, Ct.

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Special Machines designed and built

For efficient multiple-spool winding with uniformly smooth lay. Wooden or paper spools. Winds from barrel or pin swifts, cops, cones, etc. Write for catalog.

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NEWS ABOUT MEN

business and recently operating his own selling agency and converting business in Philadelphia, died in Camden, N. J., Aug. 13.

Max Pick, general manager and treasurer of L. Sonneborn Sons Co., New York, died Aug. 20.

Samuel S. Dale, 81, for some years editor of *Textile World Record*, died at his home in Brookline, Mass., Aug. 11. The present TEXTILE WORLD is directly descended from that publication. Mr. Dale was prominent in wool tariff matters and connected with the former National Carded Woolen Manufacturers Association. He had recently donated his library and diary to several colleges, having retired several years ago.

Thomas Smidt, 69, chairman of the finance committee of Commercial Factors Corp., New York, died Aug. 29.

A. C. Alexander, 73, at one time president of the Alexander Mfg. Co., Forest City, N. C., died in Columbus, Ga., last month.

Henry A. Kidder, 88, for many years wool market editor of the *Boston Evening Transcript*, until his retirement in 1930, died at his home in Arlington, Mass., on Aug. 3. He was a native of Skowhegan, Me.

J. Wilson McCarver, 43, connected with Glen-Raven Cotton Mills, Kinston, N. C., died recently. He had been superintendent of Hampton Mills, Clover, S. C.

John W. Catheart, 69, for a number of years secretary and treasurer of the former Fairfield Cotton Mills, and president of the Merchants & Planters Bank of Winnsboro, died at his home at Winnsboro, S. C., Aug. 13.

Paul Vernor Campbell, Sr., superintendent of machine shops of Brandon Corp., Greenville, S. C., died July 24.

John Goss, 80, president of the J. & E. Goss Loom Reed Mfg. Co., Fall River, Mass., died at his home in Oak Bluffs, Mass., Aug. 23. For the last 20 years was a board member of the Fall River Textile Association.

Frank M. Lynch, 66, president of Olyphant (Pa.) Silk Co., West Pittston (Pa.) Silk Throwing Co., and Lycoming Silk Co., Williamsport, Pa died Aug. 12.

Dr. Ralph H. Dunlap, 48, vice-president of Industrial Hosiery Mills, Mohnton, Pa., died Aug. 9.

Walter T. Barrie, 81, president of Barrie Glove & Knitting Co., Ltd., Kitchener, Ont., died last month.

William R. Laidlaw, 59, founder and president of the Laidlaw Co., New York, manufacturers of automobile and aircraft textiles, died at his home in New Rochelle, N. Y., July 31.

Joseph D. Sullivan, for over 30 years active in textile journalism with various publications, and at one time cotton goods editor for the Fairchild Publications, New York, died recently.

Thomas D. Toy, 67, founder of Thomas D. Toy & Co., cotton yarns, New York, died Aug. 15.

Charles P. Cochrane, 87, who retired from Charles P. Cochrane Co., Philadelphia, 12 years ago, died at Ocean City, N. J., Aug. 21. He was founder and for some years president of that company.

Herbert W. Lee, 75, for 18 years chairman of Fine Cotton Spinners and Doublers Association, Manchester, England, died recently.

Andrew W. Bell, 62, for many years assistant manager of the Hadley division of American Thread Co., Holyoke, Mass., and later agent of the Westerly division, died in Westerly, R. I.

James E. Bowers, 67, who until his retirement was secretary-treasurer of Sheuerman's Woolen Mills, Des Moines, Iowa, died last month. He was employed by that concern for 37 years.

George Solomon, 60, a retired executive of the Boonton Silk Works, New York, now Boonton Textiles, Inc., died late last month.

Charles C. Stretch, 48, chief engineer and controller of Brighton Mills, Passaic, N. J., before that plant moved to Georgia, and who was recently vice-president of the McCrory Corp., operators of retail stores, died Aug. 22.

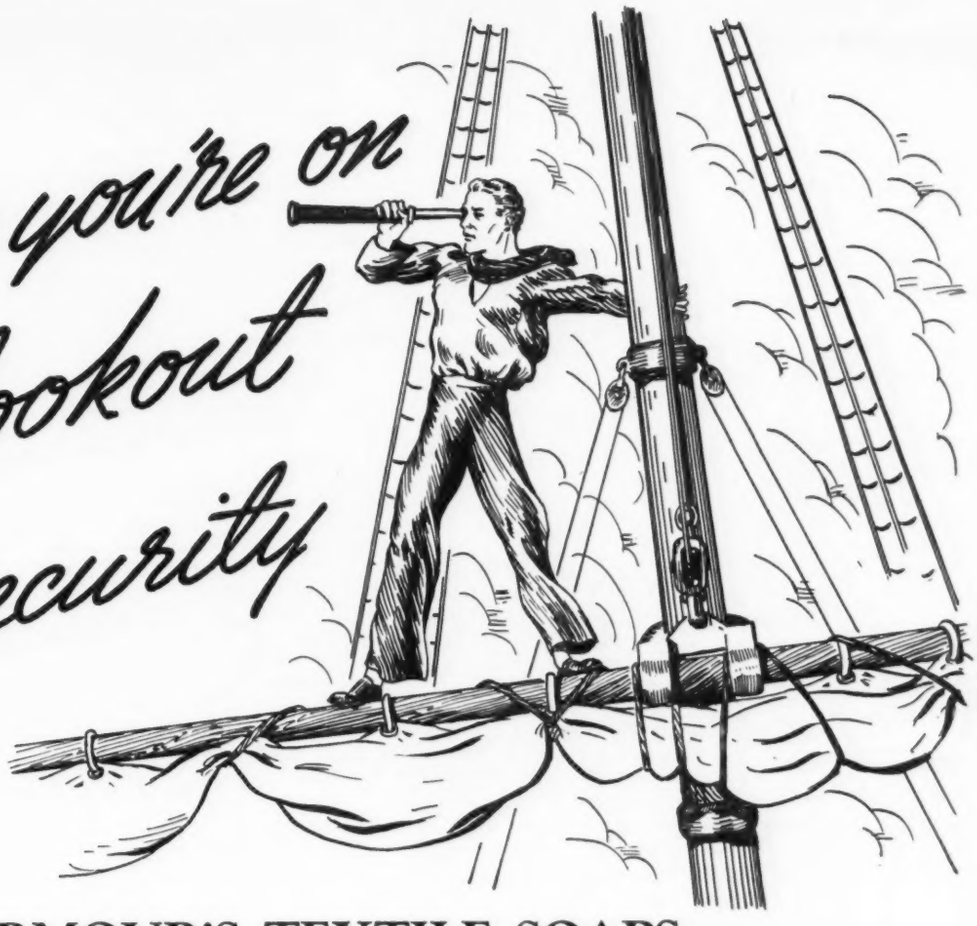
William Smaltz, overseer of finishing at the Bower Mill, Lewiston, Maine, died recently. He was associated with the concern for over 30 years.

John S. Bachman, 63, formerly manager of Anchor Duck Mills, Rome, Ga., died recently in Florida.

John P. Nissen, Sr., 76, head of the John P. Nissen Hosiery Exchange, Philadelphia, and for nearly 60 years in the hosiery business, died in August while on vacation at Port Jervis, N. Y.

Frederick R. Puleston, 71, former superintendent of Tecumseh and Wampanoag Mills, Fall River, Mass., died late last month in that city.

When you're on the lookout for security



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HERE is a full line of precision wetting agents and detergents for your production processes.

These products are scientifically controlled and scientifically balanced in their making. They are unquestionably as efficient as constant research and development in our laboratories can make them.

CERTIFIED SOAP—Widely used for throwing, boiling-off, and scouring, in addition to rayon processing. Its low titer accounts for its profusion of suds and high degree of penetration. Recommended for light-duty work. Available in flakes and solid form.

TEXSCOUR—A universal textile soap made from selected oil and having a *very* low titer. Specifically manufactured to meet the demand for an all-purpose textile soap. It analyzes with a minimum of 91% anhydrous soap. Commercially neutral and available in a milled flake.

FLINT SOAP—A tallow base soap, neutral, and available in chips and powder. It has a titer of from 41 to 42 degrees C.

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OLIVE SOAP—Another low titer soap finding application parallel to CERTIFIED. Excellent for light-duty work such as silk boil-off and rayon processing. Available in flake, bar, and solid form.

PURE PALM CHIP—This soap is made entirely from Palm Oil and is used where an extremely high titer soap is required. The soap is neutral and contains 88% anhydrous soap. Its titer is 44 degrees C. PURE PALM CHIP is a superior soap for the fulling of woolens.

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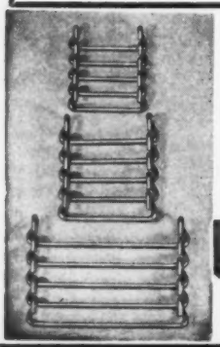

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The ideal tool for cleaning out slots in sinker and divider heads. Made in all gauges. Each one comes in a leather carrying case.

Send for bulletin giving full details on these and other products.

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LESS BREAKAGE
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1119 East 23rd Street Indianapolis, Indiana

TEXTILE MILL NEWS

Cotton Mill News

Alabama Mills, with mills in ten Alabama towns, is negotiating with RFC for a rehabilitation loan of $1,400,000.

Anniston (Ala.) **Mfg. Co.** has begun one-story addition, 140 x 180 ft., to be used as weave shed, for which general contract was let to Daniel Construction Co., Anderson, S. C. Cost over $50,000.

Appleton Co., Anderson, S. C., has let general contract to Daniel Construction Co., Anderson, for four-story addition for expansion in cloth warehouse. Cost close to $75,000, with equipment.

Arcade Cotton Mills, Rock Hill, S. C., has begun two-story addition, 26 x 80 ft., with a covered passageway, 10 x 60 ft.

Avondale Mills, Sylacauga, Ala., are building an addition to the yarn packing department, 78 x 120 ft., to be ready Oct. 15. Avondale is installing a new dry can in the finishing department of the Eva Jane plant. The new machine, built by Textile Finishing Machinery Co., Providence, will process cloth up to 90 in. width and will replace an older, smaller model.

Bibb Mfg. Co., Macon, Ga., will begin erection of one-story addition, 40 x 165 ft., to local Payne Mill. Cost over $85,000, with equipment. Lockwood Greene Engineers, Spartanburg, S. C., are engineers.

Cannon Mills Co., Kannapolis, N. C., plans construction of seven new warehouses, to measure 50 x 130 ft. each.

Caldwell Cotton Mills Co., Hudson, N. C., plans to change-over 6,000 spindles to long-draft spinning.

Carter Mills, Taylorsville, N. C., has been sold to C. L. Chandler of Gaffney, S. C., for approximately $25,000. The property was purchased from W. F. Kincaid, Jr., of Lincolnton, N. C., who had bought the mill just prior to the death of A. B. Carter.

Courtenay Mfg. Co., Newry, S. C., is installing new equipment valued at $200,000 in the spinning and carding departments.

Drayton (S. C.) **Mills** have completed installation of 180 Model XD Draper looms, also one rayon slasher and warper.

Drummondville (Que.) **Cotton Co., Ltd.,** has begun erection of two-story and basement addition, 80 x 158 ft., for which general contract was let to Montplasir & Archambault, Ltd., Montreal. Cost about $85,000 with equipment. T. Pringle & Son, Ltd., Montreal, are engineers.

Falls Mfg. Co., Granite Falls, N. C., is erecting a 100-ft. addition to its mill building.

Granite Falls (N. C.) **Mfg. Co.** has let general contract to P. S. West Construction Co., Statesville, N. C., for one-story addition to Mill No. 1. Cost reported over $35,000. J. E. Sirrine & Co., Greenville, S. C., are architects and engineers.

Holliston Mill of Tennessee, Kingsport, Tenn., has had the controlling interest taken over by T. B. McCuster, H. E. Shaw and C. V. Martin, by the purchase from H. W. Plimpton and H. M. Plimpton.

Montala Cotton Mills, Montgomery, Ala., was recently sold to the Montgomery Housing Authority at $62,000. The mill had been idle for several years.

National Tape & Webbing Distributors, Philadelphia, has purchased the Montgomery Textile Co., North Wales, Pa.

Pacific Mills report net loss for first six months of 1940 of $70,177 compared with net profit of $59,846 last year.

Pepperell Mfg. Co. reports net profit for fiscal year ended June 30, 1940, of $1,121,505, compared with net profit of $871,432 for year previous.

Ramsay Mills, New Bedford, Mass., have installed a number of Draper shuttle-changing looms.

Riverside & Dan River Cotton Mills report net profit for first six months of 1940 of $223,902, compared with $58,496 a year ago.

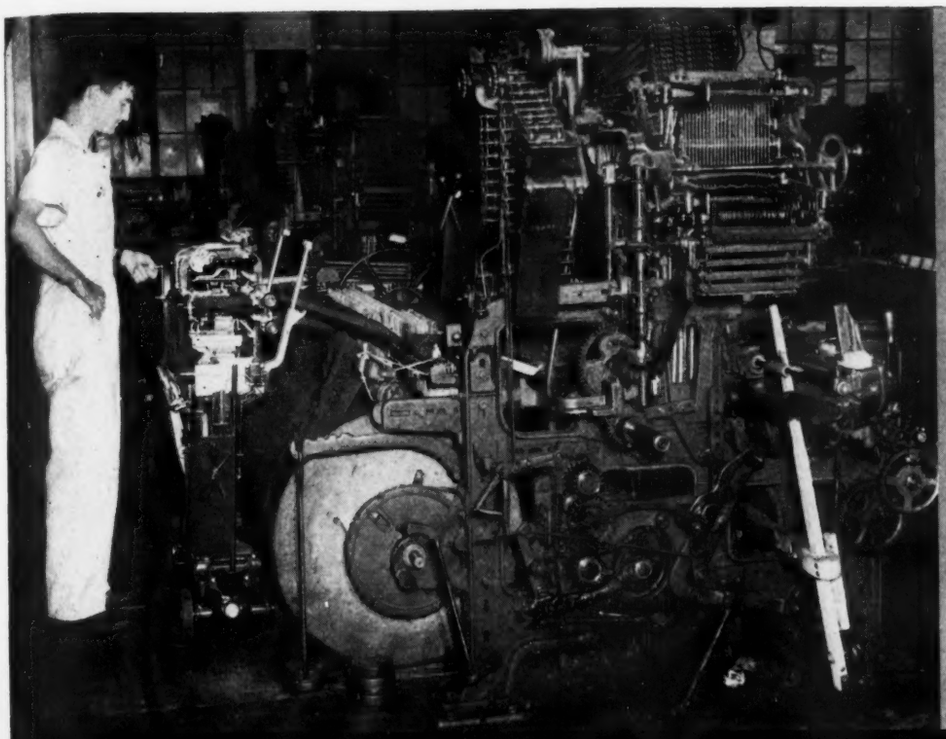
San Antonio (Tex.) **Cotton Mills,** idle for about four years, plans to resume operations. J. O. Chapman is president and manager.

S. Slater & Sons, Slater, S. C., is installing a complete system of Bahnson humidifiers in the weaving, slashing and preparatory departments.

Spencer Mountain Mills, Gastonia, N. C., is undertaking a modernization program in both mill and village.

Tipton Cotton Mills, Covington, Tenn., is again owned by its original owners, the O'Cedar Corp., of Chicago, Ill.

Victor Monaghan Co. has let contract for addition to sewerage system at the village of Victor Plant, Greer, S. C., to Reed & Abee, Asheville,



BARBER-COLMAN

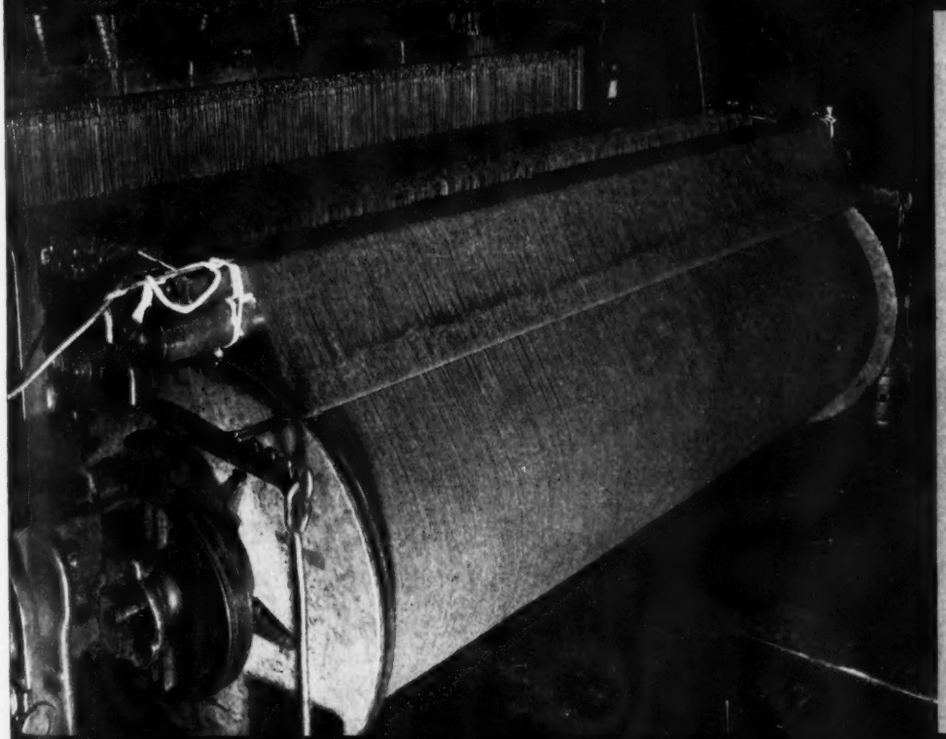
Portable

WARP TYING MACHINE

MODEL "LS"

TYING-IN WOOLEN WARPS... AT THE LOOM!

LOW COST WARP REPLENISHMENT - HIGHEST QUALITY RESULTS



Above, operator using Model "LS" machine equipped with new tying mechanism for woolen yarns. Left, woolen warp completely tied-in at the loom. These pictures were made in a prominent mill which manufactures automobile upholstery fabrics and blankets.

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FRAMINGHAM, MASS., U. S. A. • GREENVILLE, S. C., U. S. A. • MANCHESTER, ENGLAND • MUNICH, GERMANY

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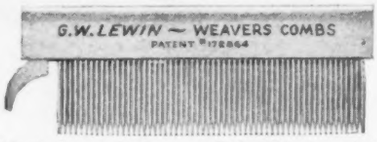

Patent No. 172864

Highly polished brass backs. Hardened steel pins with hardened steel pick-out point of special steel which will not bend.

Style B80—Curved 80 fine pins
Style B60—Curved 60 coarse pins
Style B40—Curved 40 coarse pins
Style C80—Straight 80 fine pins
Style C60—Straight 60 coarse pins

Price $2.00 Dozen—$20.00 Gross.

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STANDARD MILL SUPPLY COMPANY

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***SUPER-FIN*.. for Dyeing without Grease Spots in spite of hard water or oils in the goods**

Super-Fin for hosiery finishing has great emulsifying qualities. Improves finish. Adds elasticity to silk. Treat every bath with Super-Fin and get even dyeing, avoid re-dyes. Replace an equal amount of degumming with Super-Fin, at no extra cost, and get a better finished product. . . Other high grade "Standard" Products include Drummond Soap, Stanso Palm Oil Curd Soap, etc., etc.

Standard Soap co. of camden

1918 South Sixth St. Camden, New Jersey

Woonsocket, R. I., G. Tanguay, 281 Harris Ave.

N. C., according to J. E. Sirrine & Co., consulting engineers.

Virginia Mills, Swepsonville, N. C., has underway a $7,000 construction program.

Wool Mill News

American Felt Co., Glenville, Conn., has taken out permit for one-story addition to cost about $55,000, with equipment.

Bigelow-Sanford Carpet Co., Inc., Thompsonville, Conn., reports a net profit for first six months of 1940 of $749,033, compared with a net profit of $517,046 for corresponding period of 1939.

B. & C. Yarn Mills, Inc., Millbury, Mass., recently organized, plan operation of a mill at Woonsocket, R. I. Josaphat Chauvin is president; and Germain Bousquet, treasurer.

Dominion Woolens & Worsteds, Co., Ltd., Toronto, Ont., plans one-story addition; cost over $50,000, with equipment.

Hadley Mills and **Lynn Textile Co.** have signed leases with the Farr Alpaca Co. **Holyoke Textile Mills,** the third plant now running in the Number 1 mill, is to sign a lease in a few days.

Holyoke (Mass.) **Worsted Mills** will be taken over by interests identified with Donald R. Green and Joseph F. Metcalf, 2d, officials of the old Farr Alpaca Co.

Jackson County Woolen Mills, Moss Point, Miss., new addition has been completed, which provides the company with 50,000 sq. ft. for shipping room and warehouse.

Lansdowne Spinning Mills, Germantown, Philadelphia, have started a two-set mill at Church Lane and Lena St. on woolen yarns for weaving and knitting. Bernard Gorman is owner.

Mohawk Carpet Mills report net profit for first six months of 1940 of $505,585, which is slightly higher than profit for first half of 1939.

National Worsted Mills, Jamestown, N. Y., will award contracts this month for construction of a brick, steel and concrete addition at its plant in suburban Falconer. Plans prepared by Beck & Tinkham, architects, provide for a one-story structure, 30 x 200 ft., to cost about $40,000.

Peerless Woolen Mills, Rossville, Ga., has begun the construction of a large warehouse. Batson & Cook Co., of Newnan, Ga., has the contract, and the building will be 100 x 300 ft., two stories.

Pittsfield (N. H.) **Weaving Co.** has completed two one-story additions, 38 x 42 ft., and 18 x 38 ft., and is installing additional looms and other equipment.

Plaza Mills, New York, have leased the Farr Alpaca C shed, now owned by the Holyoke (Mass.) Industrial Properties, Inc., and the 300 looms in it will soon be running with 200 employees on a two-shift basis. Philip L. Weiss is president of Plaza Mills.

Wool Combing Corp. of Canada, Ltd., recently formed, is preparing to open a modern plant in Acton, Ont., as soon as the necessary machinery can be installed. Lord Barnby is president. Capacity will be 3,000,000 lb. tops annually.

Worcester Spinning & Finishing Co., Chapel St., Leicester, Mass., recently organized, plans early operation of local mill. Property is being taken over. M. E. Power is president.

Rayon & Silk Mill News

American Viscose Corp. is taking bids for one-story addition to plant at Lewistown, Pa. The company began production at its new Front Royal, Va., unit last month, starting up 10 of the plants 200 spinning machines. At the Roanoke, Va., unit, work has been started on six reeling sheds.

Sidney Blumenthal & Co., reports net profit of $32,816 for the quarter ending June 30. A loss of $89,147 was recorded for the corresponding quarter of 1939. Net profit for six months of this year was $25,245, compared with a net loss of $128,795 for the first six months of 1939.

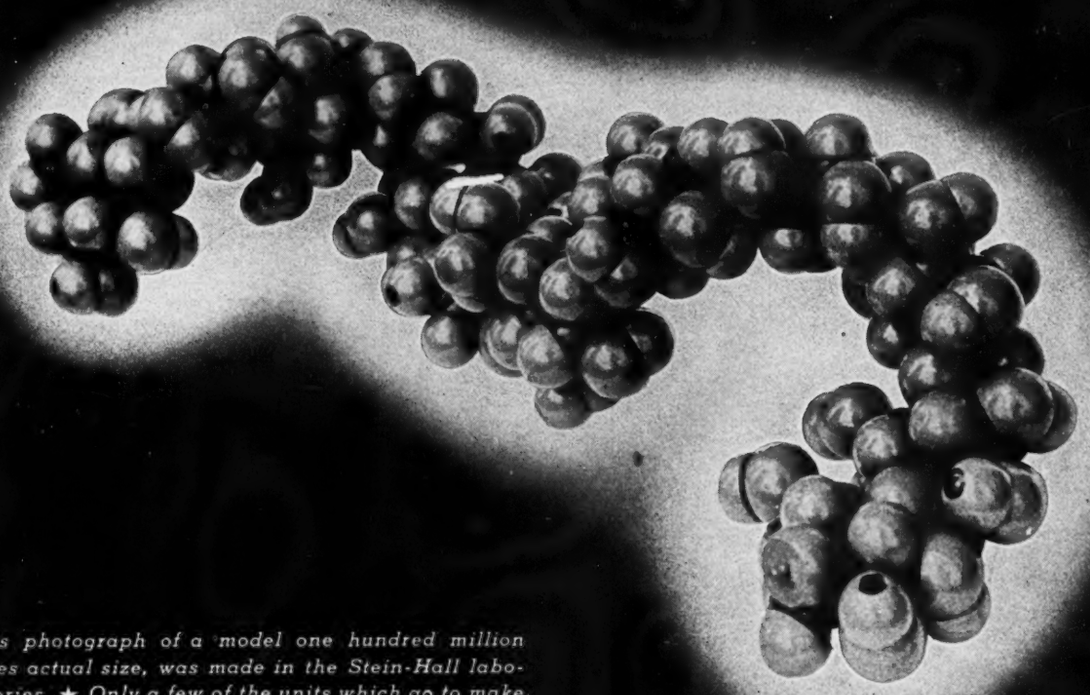
Bonita Ribbon Mills, Brewton, Ala., newly established, has gotten into operation with 54 looms and auxiliary equipment.

Burlington Mills Corp., Woodlawn, N. C., unit, has begun installation of new machinery for a rayon throwing plant. The Roanoke, Va., weaving unit has completed construction of an addition in which 200 additional looms will be installed. The Radford, Va., unit, is building an addition to its present plant which will be finished in about three months.

Duplan Silk Corp. reports net profit of $414,028 for fiscal year ended May 31, 1940, against $420,181 in previous fiscal year. It is constructing at its Waynesboro, N. C., plant, ten new houses for its employees. John

MEET A STARCH MOLECULE ★★

$(C_6 H_{10} O_5)_x$



This photograph of a model one hundred million times actual size, was made in the Stein-Hall laboratories. ★ Only a few of the units which go to make up these complex chains can be shown here; actually a starch molecule is believed to contain as many as a thousand or more units.

STARCH . . one of the most common raw materials used by mankind is yet one of the most mysterious. ★ Its use in textile processing and in other industrial applications is well known; yet scientists know relatively little of its fundamental construction. ★ In the Stein-Hall laboratories, basic research is continually carried on to analyze the complex distribution of the carbon, hydrogen, and oxygen atoms which arranged in one way comprise starch; arranged a little differently, spell cotton or paper. When this secret is discovered, science and industry may find brilliant new uses for starch, akin to the path blazed by the coal tar derivatives. ★ Through Stein-Hall research . . both theoretical and practical..difficult problems of textile processing are constantly being solved. And as research goes on, textile men will benefit by even better starches and lower costs.

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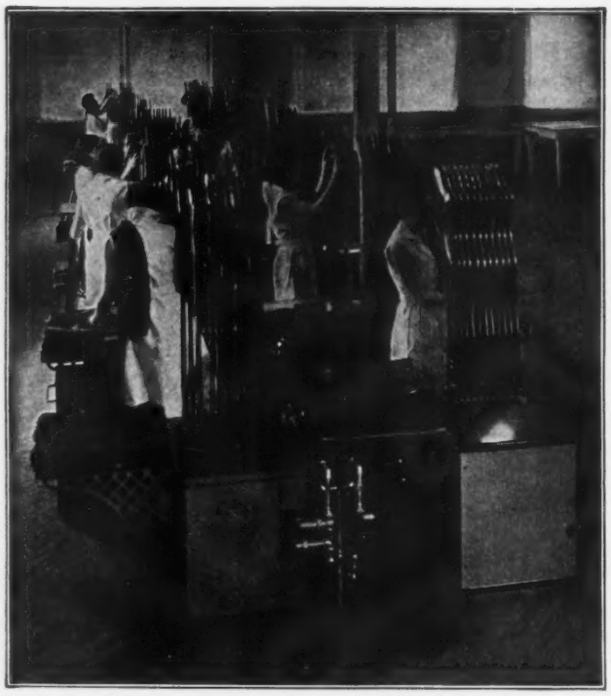
PARAMOUNT DUAL HEAT

1000 DOZENS DAILY

HOSIERY FINISHING



A PRODUCTION in excess of 1,000 dozens full fashioned ladies' hosiery is being finished daily on the 13 PARAMOUNT DUAL HEAT MACHINES operated in this mill during one eight-hour shift—and the character and quality of the work is incomparable since the PATENTED DUAL HEAT principle of drying is positive protection against "baking" delicate silk fabrics. Not only does the PARAMOUNT DUAL HEAT MACHINE contribute outstanding features of production and quality, but it represents—

1. Less investment per dozen
2. A minimum of floor space occupancy
3. Less power and steam consumption per dozen
4. Ideal room and working conditions
5. Less maintenance
6. Ease and comfort to the operator
7. Simplicity and durability of construction

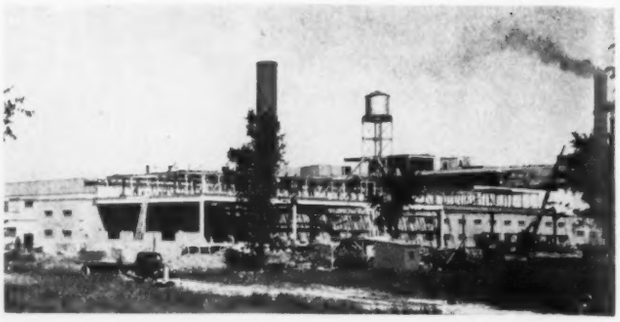
Any one feature alone, of the numerous advantages which the PARAMOUNT DUAL HEAT MACHINE offers, will justify a change to this superior method of hosiery finishing.

WRITE FOR DETAILS

Furnished on SALE or RENTAL Plan.

PARAMOUNT TEXTILE MACHINERY CO.

538 South Wells Street Chicago, Illinois



INDUSTRIAL RAYON CORP'S $4,000,000 expansion program is moving forward on schedule at Painesville, where the number of continuous spinning machines is being increased by 50%. Structural steel is all in place for the addition required to house some of this equipment. Nearly an acre of floor space is being added to the continuous spinning room alone where some of the additional continuous spinning machines are already under construction. When the expansion program is completed next spring the plant will have a capacity of about 20,000,000 lb. a year. Company has acquired adjacent property at Painesville totaling 1230 acres.

Bauer, of Waynesboro, is in charge of the work.

Luray (Va.) Textile Corp. awarded provisional contract to D. B. Coffman for construction of a new throwing plant on a bid of $42,300. Bahnson Co. received a sub-contract for air conditioning and humidifying the building. Ernest Glaesel of Clifton, N. J., is president. Capitalization is $200,000.

Onyx Textile Corp., New York, N. Y., has leased space in mill of Royal Weaving Co., Pawtucket, R. I., totaling about 30,000 sq. ft. for mill. About 200 looms and auxiliary equipment will be ready for service in October. Present mills of company in New Jersey and Pennsylvania will be removed to new location.

Radford (Va.) Weaving Mill, unit of the Burlington Mills Corp., has begun the construction of an addition, 206 x 169 ft., one-story.

Knitting Mill News

Adams-Millis Corp. reports net profit of $244,091 for first half of 1940 compared with $215,430 profit for first half of 1939.

Blackstone Hosiery Mills, Valdese, N. C., are constructing two-story addition, 26x54 ft.

Butterfly Hosiery Co. Ltd., Drummondville, Que., has erected an addition. Four new 28-section Kalio "Complet" full-fashioned knitting machines have been installed.

Continental Hosiery Mills, Henderson, N. C., is the name of the former Vance Hosiery Mills.

Davis Full-Fashioned Hosiery Mill, Greenville, N. C., recently organized, is adding a dyeing and finishing unit and plans for additional knitting machines.

Fairy Silk Mills, Shillington, Pa., Earl S. Jenckes, receiver, desires court permission to purchase seven more high speed tricot machines at $4,500 each. One has already been installed. Sixteen of these machines would give production equal to that of the 30 older machines now in place.

Gotham Silk Hosiery Co. reports net loss for first six months, 1940, of $156,975 compared with net profit of $91,515 for similar period in 1939.

Hinshaw Hosiery Mills, Balfour, N. C., is installing additional machinery, including knitting and looping machines.

Hickory, N. C. — Hosiery mills here are planning expansions: Knit-Sox Hosiery Mills and the Louis Lavitt Co., a yarn company, will construct a new building to cost $15,000; the Duke Hosiery Corp. will take over the entire building in which it is now occupying only a portion; the M. & M. Hosiery Co., recently organized, will be housed in a new building on 24th St., construction on which is to begin immediately.

Hollar Hosiery Mills, Hickory, N. C., has purchased two lots and a building adjoining the present plant and will expand the mill in near future.

Karesh Hosiery Co., Inc., Columbia, S. C., is new corporation, at 240 S. Gregg St.

Lauderdale Hosiery Mills, Fort Lauderdale, Fla., have been closed down temporarily and will probably be moved to another location in this place.

Liberty (N. C.) Hosiery Mills plan to install most modern type of finishing machinery in the new unit just completed; total cost, $100,000.

Monarch Knitting Co., Ltd., Dunnville, Ont., plans

KNITTING CIRCULAR

Everywhere in the New York stores you will see interesting new novelties in hosiery, especially in the sports line for women—and girls, and for men, too. This would seem to indicate that the coming fall should be an excellent season for novelty merchandising.

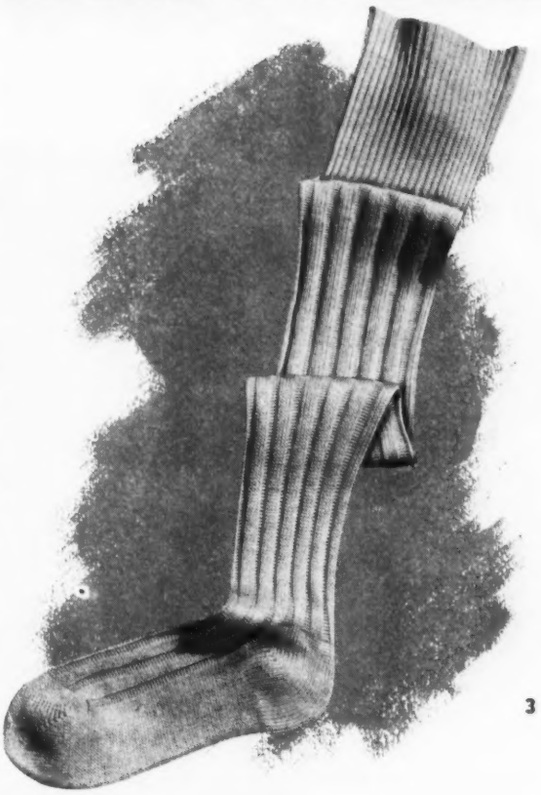
Typical of the trend is a two-piece sock, No. 1, from Bonwit Teller —of white wool banded with Kelly green. This is featured on the cover of the August 15th issue of VOGUE. Illustrated is a simple tuck pattern—but this item can be made in a rich variety of patterns in the instep as well as the leg on the Komet Links-and-Links Machine.

The "slipper sock", No. 2, is another extreme novelty, many types of which are now appearing. Shown here is one with blue corduroy toes and heels and an instep and leg of red wool with a design similar to a cable stitch. The "slipper sock" sold well last winter for wear after skiing. This year it is thought that college girls will take it up for lounging and for wear under rubber boots.

Interesting, too, is the full length red wool campus sock, No. 3. produced by Tricamp. It will be sold by Abercrombie & Fitch and Lord & Taylor for wear with the knee-length skirt for skating and other outdoor sports. Tricamp says that full length socks like this have been worn for some time by the very smartest French women, and offer definite possibilities for merchandising here.

A flecked tweedy-looking high sock, also from Tricamp, is shown in illustration No. 5. This is made of block dyed yarn on the regular Komet Machine. Shown with it is a white high sock—a Sarfert item expected to be extremely popular this fall.

The first two-color heelless sock to appear on the market is the man's swivel sock in brown and beige, No. 4. This and the beautiful chevron-patterned sock, No. 6, shown below it—a camel-colored Links-and-Links of rayon, rabbit's hair and wool—are also from Sarfert Company.



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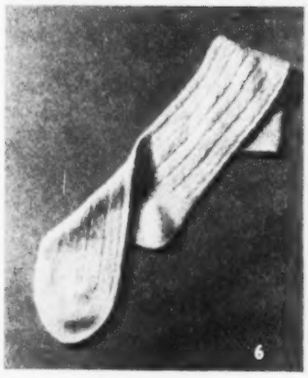


6

Obviously, those manufacturers equipped with machines that produce *both* novelty hosiery and the regular "bread and butter" staples will be in the best position to cover market demands effectively. This is exactly the value of the S & W Komet Links-and-Links Machine. It is a versatile machine that makes many staples, and can be switched at any time into the production of novelties of a widely diversified character, including all of the newest illustrated on this page. Our staff will be glad to give you complete information about this and other S & W machines.

SCOTT & WILLIAMS, INC., 40 Worth Street, New York, N. Y.

Established 1865

RYERSON CERTIFIED STEELS

Large Stocks... Uniform High Quality... Immediate Shipment... Principal products include—Alloy Steels, Tool Steels, Stainless Steel, Hot Rolled Bars, Hoops and Bands, Beams and Heavy Structurals, Channels, Angles, Tees and Zees, Plates, Sheets, Cold Finished Shafting and Screw Stock, Strip Steel, Flat Wire, Boiler Tubes and Fittings, Mechanical Tubing, Rivets, Bolts, Nuts, Washers, etc. Write for Stock List. Joseph T. Ryerson & Son, Inc. Plants at: Chicago, Milwaukee, St. Louis, Cincinnati, Detroit, Cleveland, Buffalo, Boston, Philadelphia, Jersey City.

for Results

USE

Mc GRAW-HILL

DIRECT MAIL LIST SERVICE

one-story addition, to cost $50,000, with equipment.

Morristown (Tenn.) **Knitting Mills, Inc.,** is establishing a new unit at Dandridge, Tenn., which will contain 60 Banner knitting machines.

Nolde & Horst Co. have announced that the two hosiery units at McMinnville, Tenn., will be discontinued at an early date.

Phoenix Hosiery Mills Ltd., has commenced operations at 2025 Desjardins St., Montreal, Que., for the production of women's and children's circular cotton hose. H. Seigler, president, was formerly in the hosiery industry in Holland, and E. Petel, manager was formerly general manager of now liquidated New Knit Hosiery Mills Ltd., Richmond, Que.

Ragan Knitting Co., Thomasville, N. C., has had L. A. Martin, attorney of Lexington, N. C., named as temporary receiver. Operations will continue pending a hearing on permanent receivership.

William Reed Sons, Birdsboro, Pa., have purchased a building on Beacon Street and are moving into same. They will later install additional machinery.

Regent Knitting Mills, Ltd., Montreal, Que., plan one-story addition. Cost estimated close to $65,000.

Ripon (Wis.) **Knitting Works** plan to open a yarn mill on Scott St. this month. Carl Howard will serve as superintendent.

Russell-Watkins Corp., Greensboro, N. C., recently organized by Allen H. Watkins, formerly treasurer of Bogle-Watkins Corp., Greensboro, now liquidated, has preliminary plans for one-story mill on local site, for production of seamless hose for men.

Salem (Va.) **Full-Fashion Hosiery Mill** plans expansion and improvements, with installation of additional equipment. Cost about $65,000, with machinery.

A. A. Shuford Mill Co., Hickory, N. C., has begun erection of one-story addition, for which general contract was let to Herman-Sipe Co., Conover, N. C. Cost reported about $40,000, with equipment. J. E. Sirrine & Co., Greenville, S. C., are architects.

Southland Mills, Inc., Fort Payne, Ala., is the new name for the former Menton Mills. This mill has 60 machines and manufactures anklets and socks.

Tempo Hosiery Mills, Inc., Ephrata, Pa., recently organized, have taken over local mill and equipment of American Full-Fashioned Mills, Inc., and will specialize in production of women's silk hosiery. August Pross and Betty Harris are president, and secretary-treasurer, respectively, both formerly connected with the American company noted.

Van Raalte Co. reports net profit for first six months, 1940, of $356,654 compared with net profit of $485,360 one year previous.

Walton Knitting Co., Hickory, N. C., has let general contract to M. C. Grouch Co., Hickory, for one-story addition. Cost reported close to $25,000, with equipment.

White Knitting Mills, Los Angeles, Calif., have been established by Philip White.

Processing Plant News

City Textile Printing Corp., New York, has been formed by Dave Levins, and Leo and Irving Moskowitz. Plant is at 511 West 38th St.

Cooper-Kenworthy, Inc., Providence, R. I., has filed plans for the construction of one-story dyehouse, 57 x 62 ft. Eugene B. Whipple drew the plans.

Fairlawn (N. J.) **Finishing Co.** plans one-story addition to mill on Maple Ave., for expansion in dyehouse and printing divisions. Cost estimated close to $100,000, with equipment. Proposed to carry out work in fall and get plant operating about Nov. 1.

Keen Dyeing Corp., Paterson, N. J., has been incorporated by men formerly associated with General Piece Dye Works, including Harry Uberti.

Pocono Co., Trenton, N. J., rubberizer, has been sold to National Automotive Fibers, Inc.

Sacks Dye Co., Danbury, Conn., recently chartered with capital of $50,000, plans operation of local dyeing and finishing mill. Incorporators include Frank G. Culhane and Francis C. Belvin, both of Danbury.

Silver Line Dye Works, New York, is now being conducted by Morry A. Bard and Elias Tarshas, who have purchased the interest of Sam Fiskin, formerly associated with them in the dye works.

Southern Bleachery & Print Works, Taylors, S. C., is constructing an addition to cost $50,000 which will increase plant capacity.

Star (N. C.) **Finishing Co.,** has been chartered to make and sell all kinds of hosiery; authorized capital, $25,000. Incorporators include C. V. Richardson, G. W. Scott and B. R. Koogler, all of Star.

It still seems like magic to me—but here's how it happened. We manufacture wool specialties. We had been using the same processing formula for years.

Then a C.P.P. technical man asked if he could work with us to develop a better formula. We agreed to that—so he carefully checked our production methods.

He recommended a new formula that cut processing time in half *without increasing* fulling agent cost! It doubled our production. But that's only *half* the story.

Now we get a better finished product than our competitors offer. Our salesmen have 5 big advantages to talk about. Our product (1) has better color (2) will not discolor (3) has less odor (4) cleans easier (5) gives better dyeing results!

THE FREE C.P.P. CONSULTING SERVICE MAY SAVE YOU MONEY, HELP YOU TURN OUT A BETTER PRODUCT! ASK YOUR C.P.P. MAN TODAY!

This textile manufacturer's actual experience is just one example how quality processing agents plus their proper application can result in a better product and lower costs.

No matter what your processing requirements may be, you'll find washing and wetting agents to meet your special needs in the complete line of C.P.P. products.

Because of the volume in which they are produced, C.P.P. processing agents in most cases cost less to use than many so-called "special" products. Ask your C.P.P. man for information—or write direct. No obligation, of course.

COLGATE-PALMOLIVE-PEET CO.

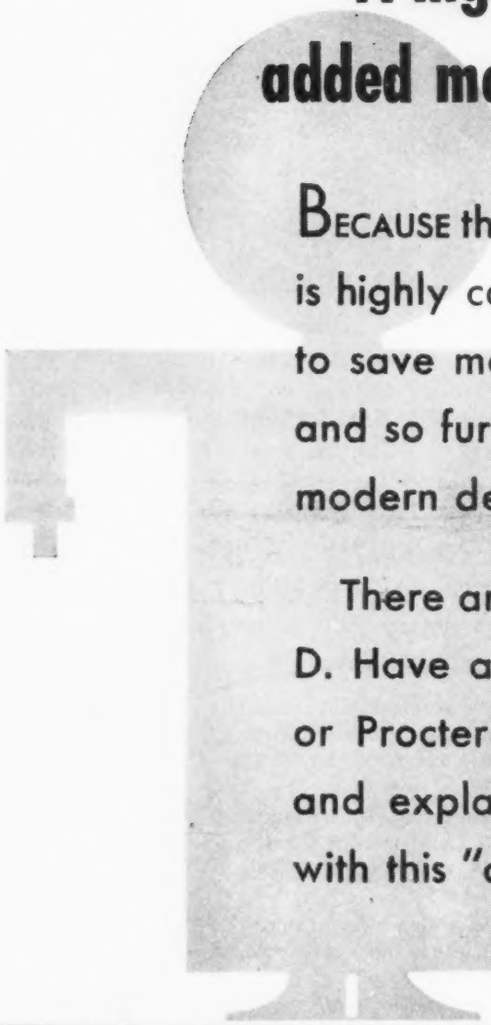
INDUSTRIAL DEPT., JERSEY CITY, N.J.

NEW MODINAL* D

A highly concentrated detergent with added money-saving advantages for you

BECAUSE this fatty alcohol sulfate paste is highly concentrated, it enables you to save money on handling and use, and so further broadens the base for modern detergents.

There are many uses for "Modinal" D. Have a representative of Du Pont or Procter & Gamble call upon you and explain the economies possible with this "all-use" detergent.



* "Modinal" is the trademark used by the Gardinol Corporation to designate a group of its fatty alcohol sulfates.

GARDINOL CORPORATION • *General Offices: Wilmington, Delaware*

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FLUORESCENT *Lighting*

There's a big increase in amount of light here, but no sign of glare or deep shadows on the work. Fluorescent Daylight is so natural, so cool, so comfortable, it easily steps up efficiency. No more time out for eyestrain headaches.

MUST BE GOOD!

As the saying goes, "it must be good to have got where it is." Yes, Fluorescent lighting is going into more mills and factories every day. It will be *your* "future" lighting—because of its revolutionary benefits. It gives you the *quantity* of light you need at low cost. More important, Fluorescent lighting gives you entirely new *qualities* of light never before obtainable. It's cool. It's amazingly glare-free. And now you can have a new "daylight" twenty-four hours a day! Fluorescent lighting is HERE, ready to install. It comes in "packages" ready to hang up, or it's easily conformed to special lighting demands anywhere.

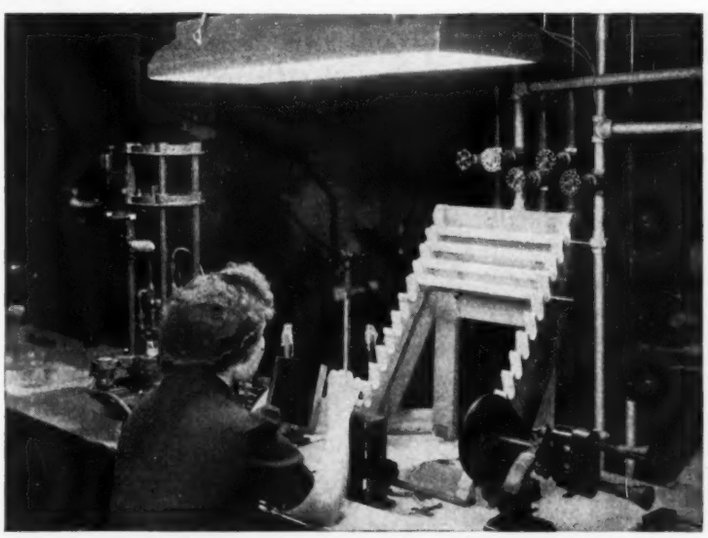
MUST BE RIGHT

To enjoy the full benefits of Fluorescent lighting, to profit from every advantage it offers you, be sure of the equipment you buy. It's wise to look for dependable names. And make certain that your Fluorescent fixtures are Westinghouse Lamped. Westinghouse MAZDA "F" Lamps are designed to produce the *maximum results* you expect from *approved* fixtures and controls. Westinghouse Lamp Division, 150 Broadway, New York, U. S. A.

THESE SEALS OF APPROVAL

RLM

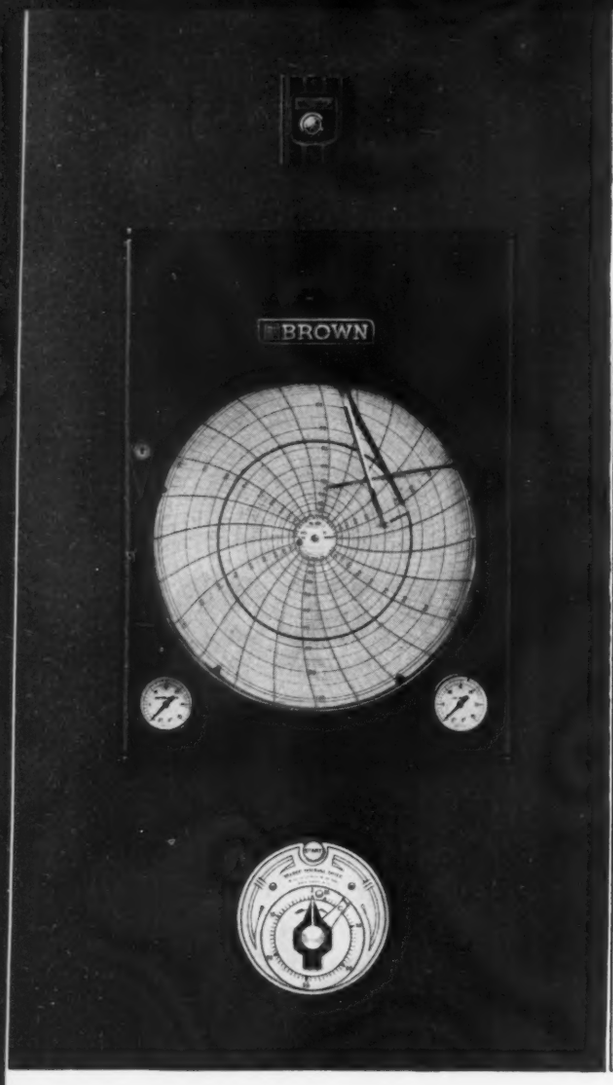
are further safeguards of quality on luminaires, fittings and fixtures for MAZDA "F" Lamps.



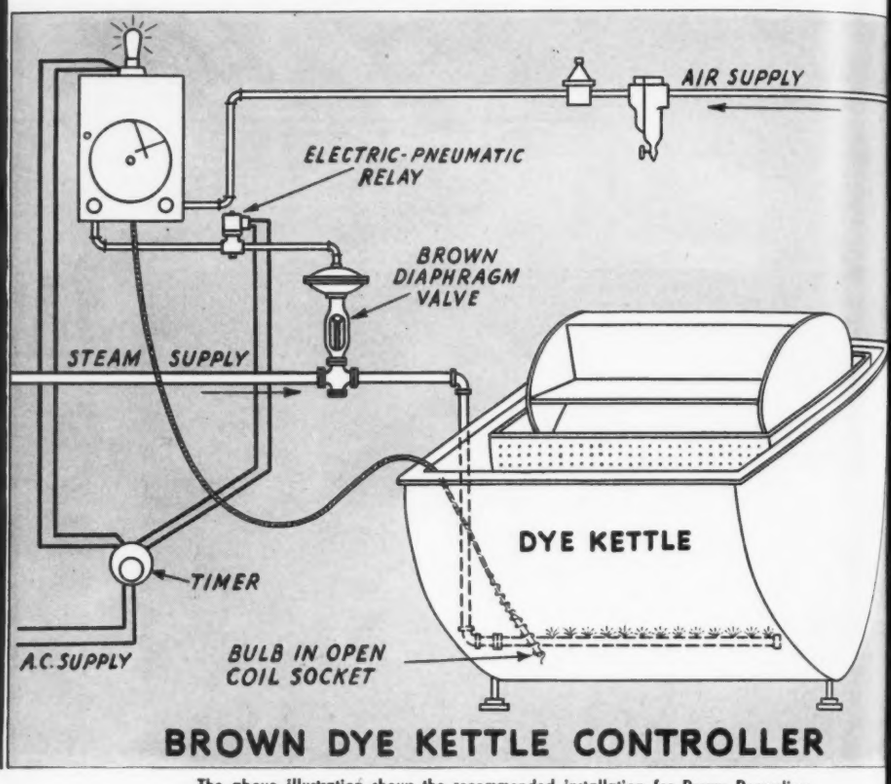
Here at a Westinghouse Lamp Division plant, Fluorescent light is used to double-check Mazda "F" Lamps by rigid inspection. Mazda "F" Lamps must be right *and Fluorescent light shows up minute details of quality.*

Westinghouse FLUORESCENT LIGHTING

W Westinghouse MAZDA LAMPS



How to Safeguard
DYEING PROFIT



BROWN DYE KETTLE CONTROLLER

The above illustration shows the recommended installation for Brown Recording Thermometer Controllers (air-operated—10% Throttlor)—for dye kettle control.

In the process of dyeing textiles—there is a critical temperature and time factor at which the absorption of each dyestuff by the fibre is at the highest. Temperature variations, either "high" or "low," mean a loss in uneven and blurred shades.

To know when this critical temperature has been reached and to hold it during the correct timing period safeguards dye-house profits.

This is impossible even for the most experienced operator without the aid of a dependable control thermometer.

In dye houses where Brown Recording Thermometer Controllers are installed, the operator merely sets the controller at the desired temperature point and time period. He is then free to perform other duties—there is no need for valve watching.

Brown Thermometer Controllers automatically hold the temperature during the whole process at the desired point . . . and automatically shut off the steam supply at the end of the timing period.

Brown Recording, Indicating and Controlling Thermometers, due to their Responsiveness, Simplicity and Flexibility, more than meet the fast-growing demand in the Textile Industry for better temperature control in dyeing processes. They are applicable for all types of dyeing—from skein to piece dyeing—from tub to jig dyeing.

Chart records from Brown Control Thermometers are invaluable guides for duplicating uniform results and bringing about a distinct saving in steam, water and dye.

Brown Thermometer Controllers are supplied in universal, rectangular cases, suitable for wall, front-of-board or flush panel mounting. Easy to install.

Send for Catalog No. 9304

This catalog fully describes the complete line of Brown Instruments and Minneapolis-Honeywell Controls for measuring and controlling moisture content, size cooking, bleaching, mercerizing, dyeing and other textile processes. Write

THE BROWN INSTRUMENT COMPANY
A DIVISION OF MINNEAPOLIS-HONEYWELL REGULATOR CO.
4509 Wayne Avenue, Philadelphia, Pa.

Offices in all principal cities. Toronto, Canada: 117 Peter Street — Amsterdam-C, Holland: Wijdesteeg 4 — England: Wadsworth Road, Perivale, Greenford, Middlesex — Stockholm, 16, Sweden: Nybrokajen 7.

BROWN THERMOMETER CONTROLLERS
and
MINNEAPOLIS-HONEYWELL CONTROL SYSTEMS

To Measure and Control is to Economize

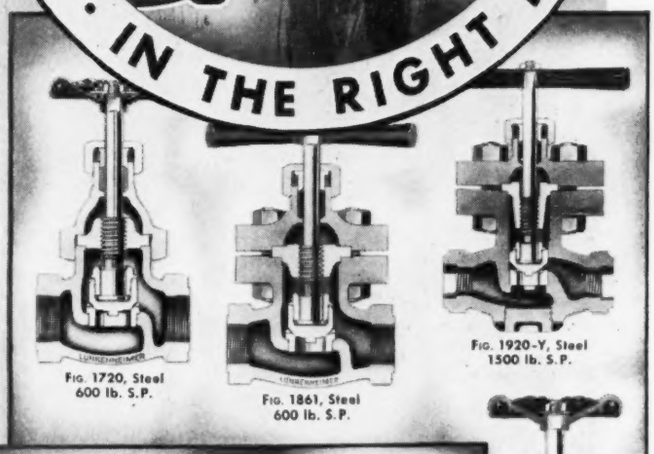
No. 6 OF A SERIES

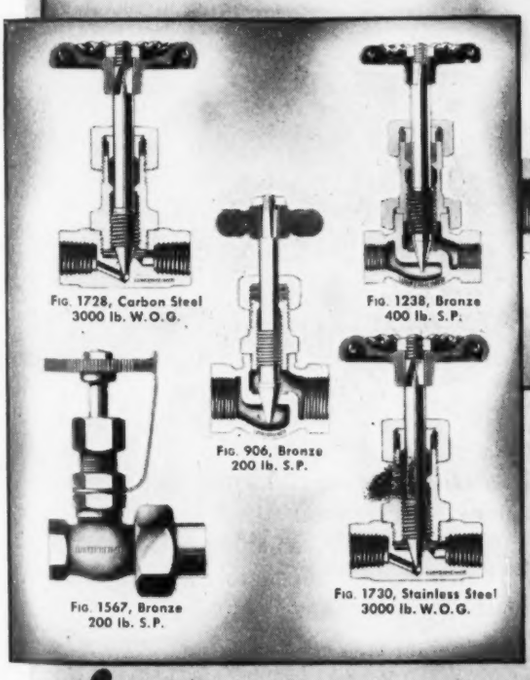
Offering a Wide Variety of Throttling and Needle Point Types for Every Service...

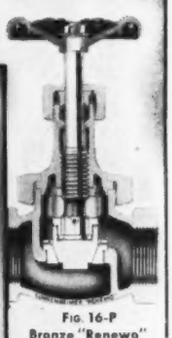
LUNKENHEIMER VALVES

for INSTRUMENT LINES, DRAINS AND BY-PASSES

• • • ARE "CORRECTLY ENGINEERED" FOR MAXIMUM ECONOMY ON THE JOB!







Behind the super-sensitive instruments which guide today's engineer in his constant search for ever-greater operating efficiency and lower operating costs are mazes of pipe lines through which the flow of liquids and gases must be accurately controlled at all times. For such service, only valves of the finest design, materials, and workmanship are worthy of their hire . . . so, it is natural that Lunkenheimer should pay special attention to the production of throttling and needle point valves for every instrument line, drain, and by-pass requirement.

For accurate flow control on all principal lines, Lunkenheimer offers globe and angle valves for all prevailing pressures and temperatures, with a special alloy bonnet-thread-bushing which assures maximum resistance to stem-thread wear under the severest of operating conditions. And for the many small lines where fine regulation of flow is required and compactness is desirable, Lunkenheimer needle-point valves of either bronze or different types of steel provide the right valve in the right place.

SEEING IS BELIEVING!

Your Lunkenheimer distributor will gladly show you the many points where "engineered superiority" guarantees accuracy, safety, and low cost service.

ESTABLISHED 1862

THE LUNKENHEIMER CO.

"QUALITY"

CINCINNATI, OHIO, U. S. A.

NEW YORK CHICAGO
BOSTON PHILADELPHIA

EXPORT DEPT 318-322 HUDSON ST., NEW YORK

Illustrated here are only a few of the Lunkenheimer valves particularly suited for instrument line service. Send for Catalog No. 78 showing the entire line, and we'll include our handy "Guide" which facilitates selection according to pressures, temperatures, and service applications.

LUNKENHEIMER

ASHWORTH PIONEERS IN CARD CLOTHING

367

A *Lucky Number* FOR BUYERS of CARD CLOTHING PRODUCTS

You don't have to be superstitious to believe in the good luck of this number. It's just a matter of plain logic.

3-6-7 stands for three manufacturing plants, guaranteeing a supply of card clothing products uninterrupted by fire, flood or storm; six repair shops assuring prompt NEARBY repair service; seven distributing points in seven major textile centers with stocks of standard constructions for immediate delivery under normal conditions.

This large manufacturing capacity, ready availability of our products and our PIONEERING experience make "367" the most significant number in the card clothing industry.

ASHWORTH BROS., INC., Woolen Div., AMERICAN CARD CLOTHING CO.

3 FACTORIES — Fall River, Worcester, Philadelphia

6 REPAIR SHOPS — Fall River, Philadelphia, Charlotte, Greenville, Atlanta, Dallas

7 DISTRIBUTING POINTS — Fall River, Worcester, Philadelphia, Charlotte, Greenville, Atlanta, Dallas

★PRODUCTS AND SERVICES: Card Clothing for Cotton, Wool, Worsted, Silk and Asbestos Cards and for All Types of Napping Machinery • • Brusher Clothing and Card Clothing for Special Purposes • • Lickerin Wire and Garnet Wire • • Sole Distributors for Platt's Metallic Wire • • Lickerins and Top Flats Re-clothed at All Plants.

★ Southwestern Representative: Textile Supply Co., Dallas, Texas

PLENTY OF ROOM!

SO you think you might be cramped for space in a rush-hour subway car? Well, maybe, but compared to the fit of a modern bearing, you've got more than plenty of room.

.002 of an inch clearance is all the bearings get in many of today's precision machines. And that's enough for cool comfort . . . as long as the lubrication is right.

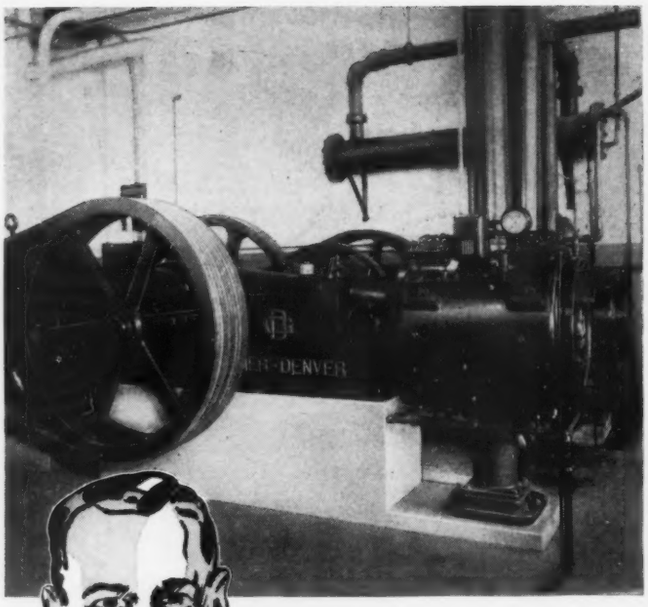
Just a thin film of oil does the trick. But if that film fails . . . look out! It's got to be there *all the time,* at slow speeds, at high speeds, and particularly when there's a sudden increase in load.

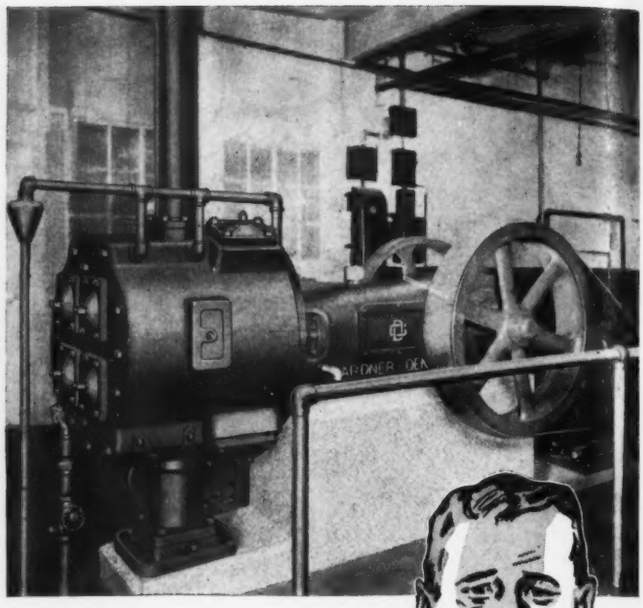
Here at Shell we've studied oil for years. And we've spent a great deal of time and money developing lubricants that stay on the job and maintain that vital oil film.

Many of these lubricants have made machines run better, smoother, more dependably . . . in plants just like yours. If you're operating some bearings that need more attention more often than they should, the chances are your Shell lubrication man has the answer.

SHELL

SHELL *Industrial* LUBRICANTS





"TO MAKE HUMIDIFICATION DEPENDABLE WE BOUGHT A GARDNER-DENVER COMPRESSOR"

"MAINTAINING constant relative humidity is important in our mill. Failure of our humidification system could put us in an uncomfortable spot.

"That's why we chose a Gardner-Denver 'RX' Compressor to supply air for our humidifying system. This compressor has the engineering excellence which assures an unfailing supply of air. What's more, with our Gardner-Denver 'RX' Compressor power costs have dropped. We like the Gardner-Denver BH-7 electromatic control that automatically fits air output to our air needs —that is a silent watchman over costs."

"LINT CLEANING WITH THIS GARDNER-DENVER VACUUM PUMP HELPS KEEP OUR MACHINES PRODUCING"

"OUR experience shows that proper lint cleaning keeps our machines producing and also assures greater output from individual operators.

"And the heart of our lint cleaning system is a Gardner-Denver 'RX' Dry Vacuum Pump. With only minimum power output, this Gardner-Denver pump furnishes the vacua we need for regular operations. Since we require exceptional dependability without excessive maintenance, we are glad that our Gardner-Denver Vacuum Pump and 'RX' Compressor have Duo-Plate cushioned, automatic plate valves that actually become tighter with use!"

Find out for yourself why Gardner-Denver Air Compressors and Vacuum Pumps can increase the efficiency and economy of YOUR mill operations. Bulletins describing Gardner-Denver textile mill equipment will gladly be sent you on request. Gardner-Denver Company, Quincy, Illinois.

BRANCH OFFICES: Atlanta, Ga.; Birmingham, Ala.; Boston, Mass.; Hazelton, Pa.; Knoxville, Tenn.; Washington, D. C.; New York, N. Y.; Philadelphia, Pa.; Pittsburgh, Pa.

GARDNER-DENVER SINCE 1859

The End of a *Bottleneck!*

How U·S·S Stainless Steel helped put this dyehouse back on a paying basis

IT happened during our busiest season, just two years ago. Jim, he's my assistant, came rushing in my office. "Come with me," he said, "I want to show you something."

I followed him out into the dyehouse. At the head of a battery of dye jigs, he stopped. "There," he said, "is where the profits are going."

Sure enough, over half of the jigs were shut down, waiting to be scrubbed out with soda ash, before we could change colors. Work was piled up and men were standing around idle. A bottleneck, if I ever saw one.

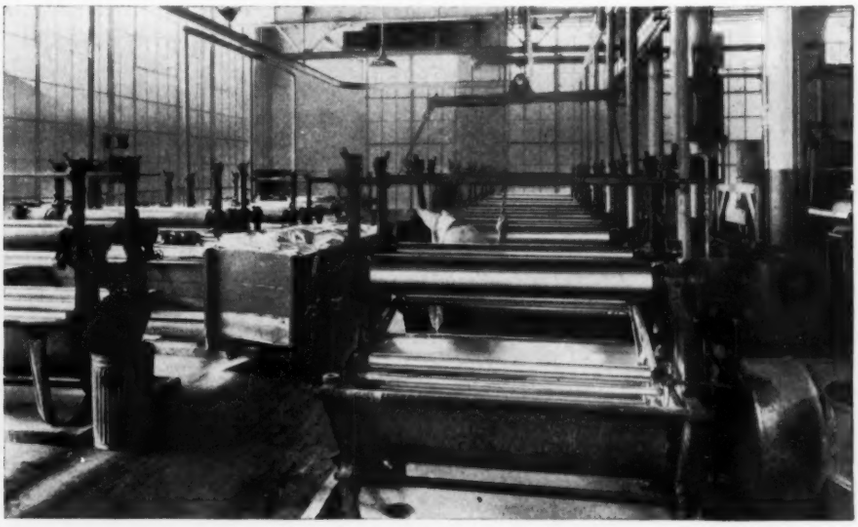
So I asked him: "What do you propose we do about it?"

"Well," he said, "I've been looking into it, and unless my figures are all haywire it would pay us to reline about half of those jigs with stainless steel and replace the others with new stainless jigs. According to my figures, the new equipment should pay for itself in a little over a year."

That night, Jim and I worked late. He proved he was right. A short time later our stainless equipment was in the dye house, operating. The production jam melted away, because all our machines were kept busy. Instead of closing a machine down for hours, when we change colors, it's now only a matter of minutes. And the dyehouse is back on a paying basis.

We've had so much success with U·S·S Stainless Steel that we've just decided to use it for all wet finishing equipment.

That's the way it works out—stainless steel dyeing and finishing equipment helps prevent bottlenecks, keeps production moving at a profitable rate. It is easy to clean, highly resistant to the corrosive attack of dyes and finishing agents, and its useful service life is practically without limit. It prevents canker stains, badly matching dye lots, and cloth spoilage. Write today for names of fabricators who can supply you with equipment fabricated from U·S·S Stainless Steel.



USS

STAINLESS STEEL

AMERICAN STEEL & WIRE COMPANY, *Cleveland, Chicago and New York*
CARNEGIE-ILLINOIS STEEL CORPORATION, *Pittsburgh and Chicago*
NATIONAL TUBE COMPANY, *Pittsburgh*

Columbia Steel Company, San Francisco, *Pacific Coast Distributors* · United States Steel Export Company, New York
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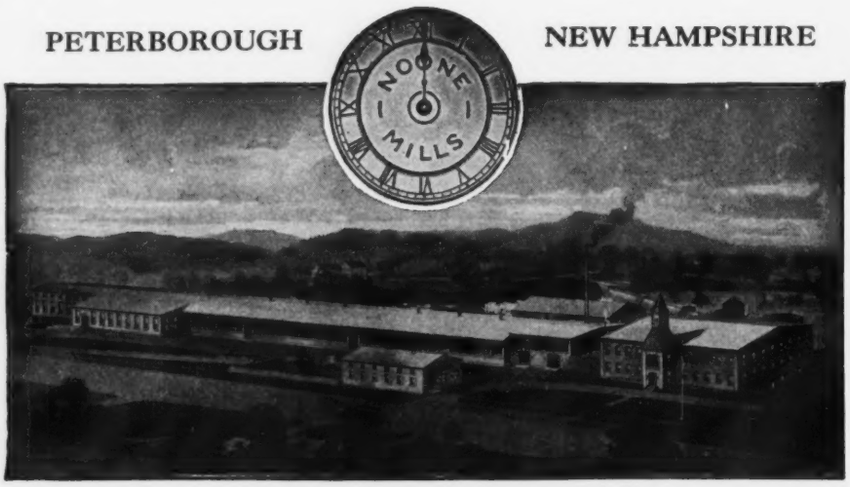
UNITED STATES STEEL

The Joseph Noone's Sons Company

A. Erland Goyette, Proprietor

PETERBOROUGH NEW HAMPSHIRE



Established 1831

Noone's Standard Roller Cloths

Insist on Noone's Standard Roller Cloths for your Spinning Rolls. Noone's have been Standard since 1831.

Results and costs are what count most.

Use Noone's Roller Cloth and be assured of a Strong Round uniform yarn, the best obtainable. Eventual cost, less than any other covering.

Good spinning can always be obtained when Noone's Roller Cloth is used, as it is the properly built Cloth,—has the correct cushion and consistency, and uniform gauge.

Noone's is best by test.

Many materials have been used for Spinning Roll Covering in years past, but have eventually been discarded in favor of the dependable Woolen Roller Cloth and Leather.

Do not be misled, put your faith in the good Old American Products: Noone's Roller Cloth and leather. If in doubt, allow us to demonstrate the superiority of our Roller Cloth and a leather cot.

Use Noone's Roller Cloths, Noone's Slasher Cloths, Noone's Clearer Cloths.

Noone's are the Pioneers in Mechanical Cloth Manufacturing in America.

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Selling Agents

ARNOLD T. MALONE, Manager

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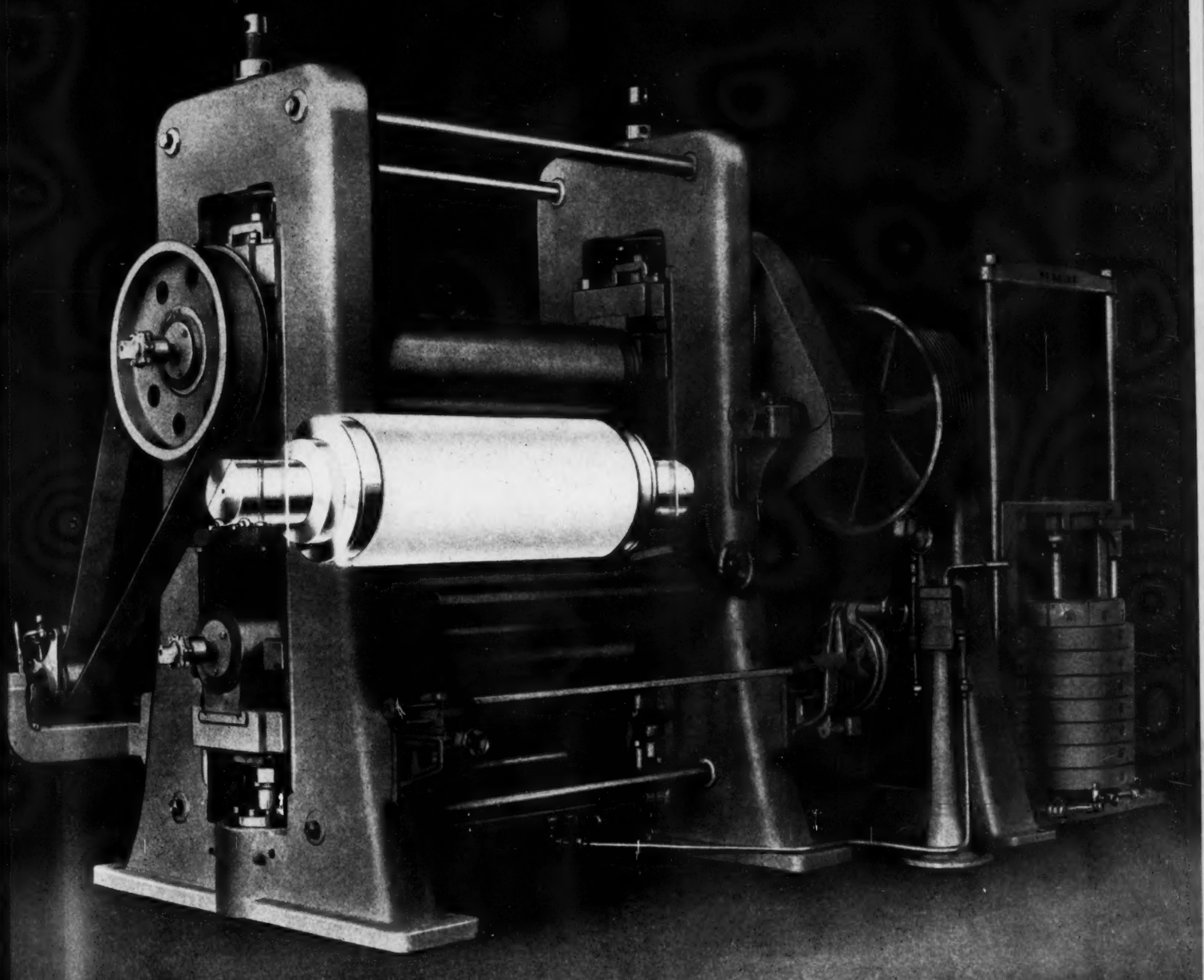
PERKINS ROLLS

IMPROVE THE PERFORMANCE
OF ANY CALENDER



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HOLYOKE • MASS.

MATERIALS GRIPPED IN STEEL!

THE patented Steelgript Brush construction has exclusive advantages that will cut the high cost of brush replacements, and make your brush expenditures an investment instead of an expense.

COTTON CARD REFILLS—Brush Strips spiraled to fit all makes and diameters of wood cores.

BURR PICKER BRUSH STRIP REFILLS

WOOL TRANSFER BRUSH—Brush Strips mounted longitudinally across metal hubs or flanges; makes a permanent core—quickly refillable.

STEELGRIPT BRUSHES in addition to the above Textile Industry uses are also designed for Cloth Steaming, Vertical Brush Rolls, Thread Dressers, Wool Cards, etc.

Write or send Blue Prints or Brush Specifications of your requirements.

FULLER manufactures a complete line of standard textile brushes, including the famous FULLER FIBER TEXTILE BROOM; also Loom, Comber, Finger, Roller and Floor Brushes. Send for Industrial Catalog.

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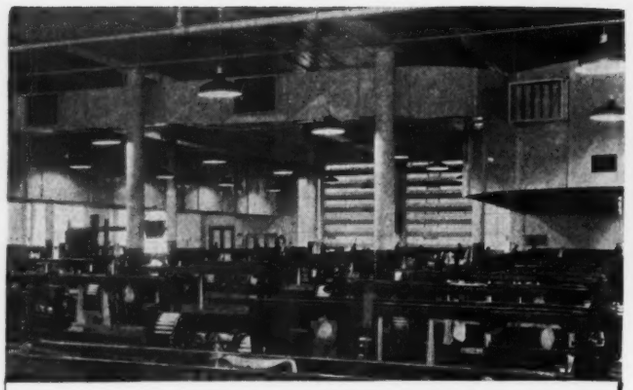
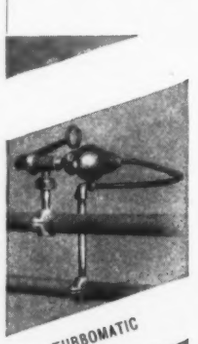
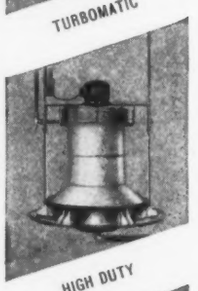
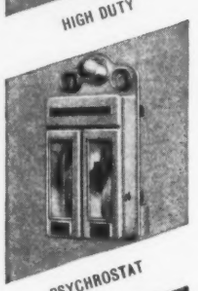


Thirsty Air . . . Tons of It


TURBOMATIC


HIGH DUTY


PSYCHROSTAT

AIR CHANGER

Your textile mill is an incurable sot. Every manufacturing operation creates thirst in the room air.

To satisfy this continuous and almost unquenchable thirst, many a mill has use for tons of humidified air—every hour. (Know of one that uses nearly 500 tons of saturated air every hour in one department only.)

Several ways there are to make and introduce this humidified air. What is the right way—or the best way—or the most economical way?

Because we make a complete line of humidifying (and Air Conditioning) devices, we are the better able to make unbiased recommendations.

Air Conditioning is bought as an investment—as a useful manufacturing accessory. Only with the right devices coupled with experience to guide right application can you get everything such an investment can bring.

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Certified Climate
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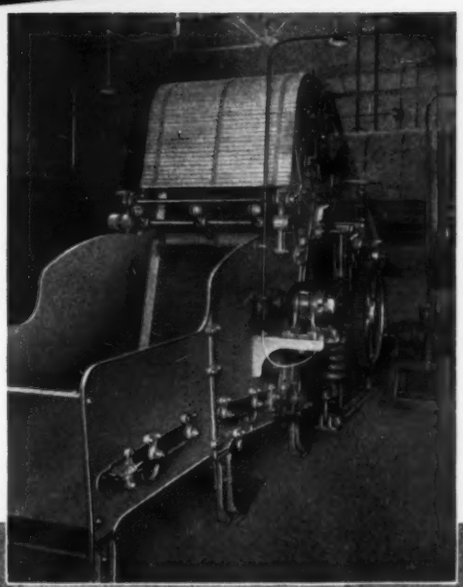
Sargent's latest

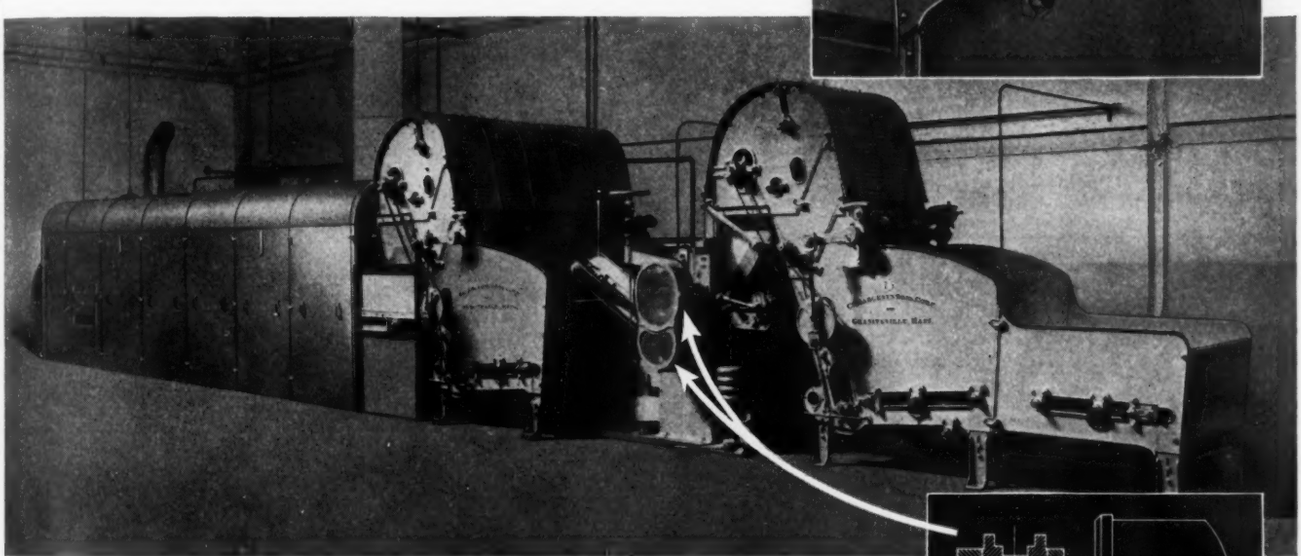
"RAW STOCK DRYING UNIT"

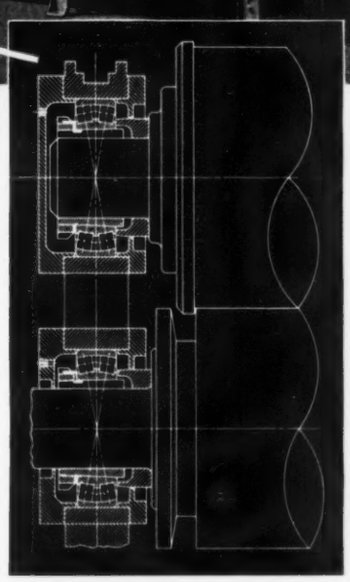


Controlled Drying ✶ Increased Hourly Production ✶ Reduction in Steam and Power Consumption ✶ 50% Saving in Labor Costs–

These are just a few of the benefits realized by the owners of this equipment. These machines will pay for themselves in 18 months.

Consult SARGENT on RAW STOCK DRYING!





DESCRIPTION OF ILLUSTRATIONS

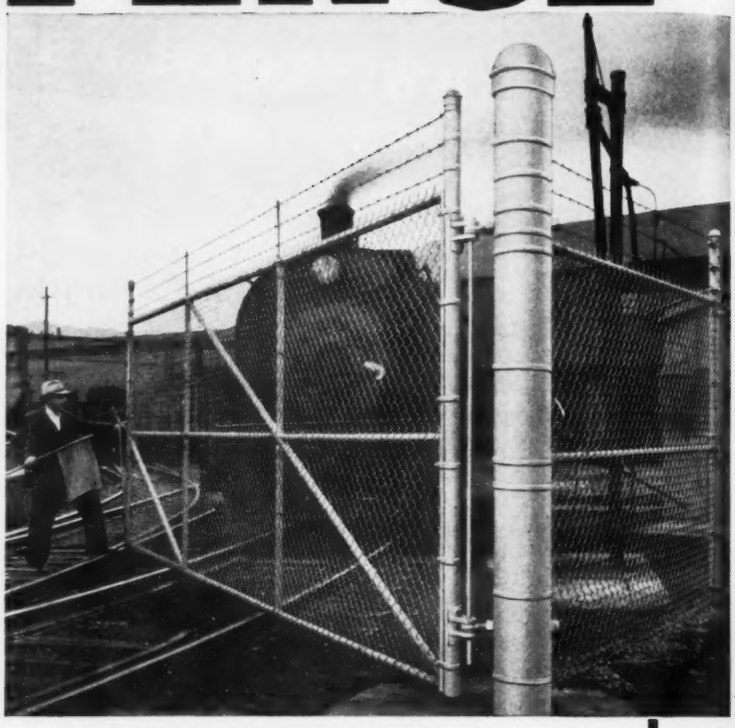
UPPER RIGHT This view shows the Feed Hopper of a 38 inch Sargent Press Roll Feed. This Feeder has a 4 foot extension to the bottom apron which provides a large holding capacity. Note the direct motor drives on Feed and Squeeze Roll Machine, also patented ball bearing comb mounting.

CENTER A Dye House installation of which Sargent is justly proud. Note its simplicity and compactness. Press Roll Machine with oscillating feed table and ball bearing rolls attached directly to a large capacity Dryer.

LOWER RIGHT The line drawing at the lower right shows Sargent's adaptation of heavy duty ball bearings to a Standard Squeeze Roll Machine. These bearings require practically no attention and at the same time are easily removable when roll repairs are necessary.

C. G. SARGENT'S SONS CORPORATION, Graniteville, Mass.

PAGE FENCE



COME ON—BE A METALLURGIST!

● It is easy to be a metallurgist when you talk to a Page Fence engineer. He will explain why a choice of fence metals is important to best meet your local atmospheric and service conditions.

Only Page can offer a choice of these superior metals: heavily-galvanized copper-bearing steel—Allegheny stainless steel—Armco ingot iron—Alcoa aluminum. And only Page provides the exclusive winged channel post for greater strength and longer life.

There's a metal, height, style and construction method to fill every requirement, whether it be immunity to corrosion, maximum strength, minimum weight or special protection.

There are 97 members of the Page Fence Association, located in 97 cities. Each is a factory-trained, long-experienced expert—a permanent, responsible local distributor with a reputation which assures the right fence, properly erected and guaranteed. Write to PAGE FENCE ASSOCIATION, Bridgeport, Conn., Atlanta, Chicago, New York, Pittsburgh or San Francisco for book "Fence Facts."

A PRODUCT OF PAGE STEEL & WIRE DIVISION—AMERICAN CHAIN & CABLE COMPANY, INC.

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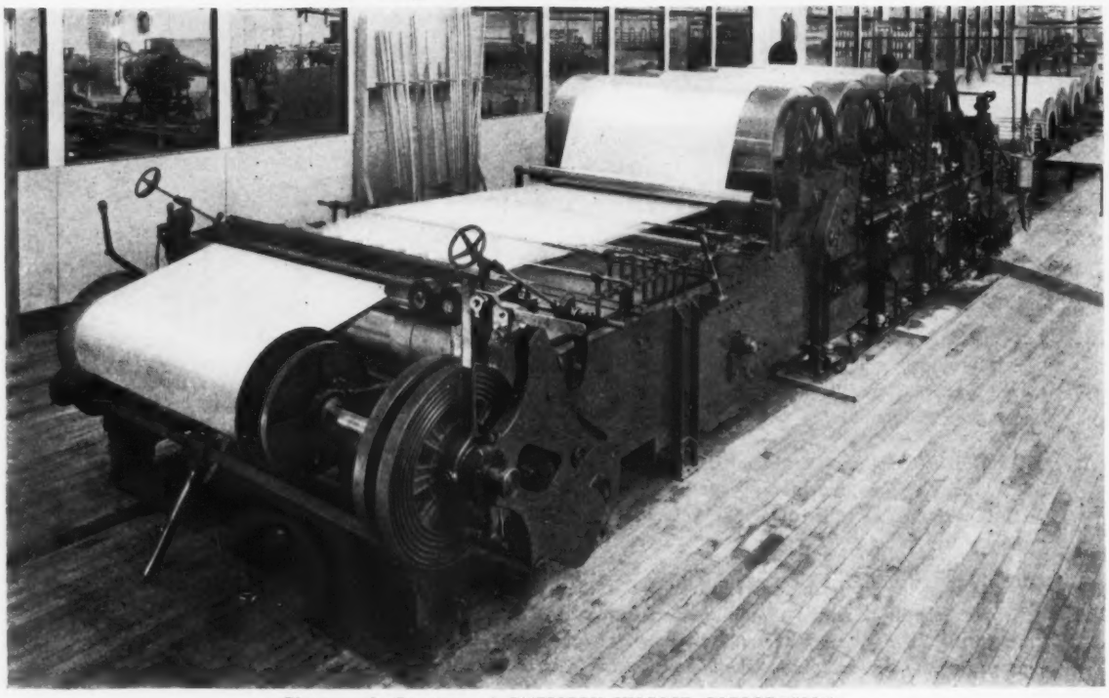
JOHNSON RAYON WARP SLASHER

Used By Leading Textile Mills



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Charles B. Johnson Machine Works • Paterson, New Jersey

Splendid examples of U.S. uniform, specialized ~QUALITY~

So are

U. S. TRAVELERS

specific designs for Special Service

Left—High—Ne-Bow—*Patented* Vertical Ring Traveler—Developed to meet the particular needs of the silk and rayon trade in the process of throwing, due to the recent adoption of the vertical ring, particularly of the lubricating type.

By eliminating the pivoting action of the Traveler, the traveler is at all times kept in close contact with the groove or device for lubricating the ring and assists in drawing therefrom the lubricant, distributing the same evenly over the entire inner surface of the ring; promoting a longer life to the traveler and a more even twist.

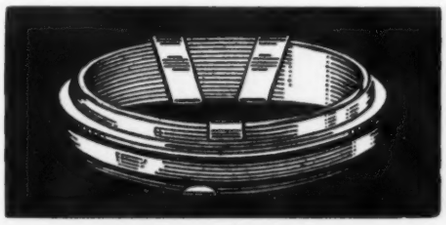
Left—Bowen—*Patented* Bevel Edge—The Bowen Patented Bevel Edge feature of U. S. Ring Travelers produces ideally smooth, even yarn. There are no angular edges to flatten the end. There are no split ends in throwing rayon and silks—no fly waste in the spinning and twisting of cotton, wool, worsted, asbestos, kindred fibres. Made and stocked in all sizes and weights, for all kinds and counts of yarns.

Sold under the

TRADE NAMES

- Bowen Round Point Travelers
- Bowen Square Point Travelers
- Bowen Improved Vertical Bronze
- Bowen Patented Bevel Edge
- Bowen Patented Ne-Bow Vertical
- Bowen Patented Vertical Offset
- Bowen Flat Ovel and Round Wire Travelers

The unifom quality of U. S. Travelers is equalled only by their diversity of *designs*, each design being perfected for particular textile needs. Today as never before you need these adjuncts to perfect quality production, free from trouble, at lowest cost.



Above—Bowen *Patented* Vertical Offset Traveler—After exhaustive tests under actual running conditions, the Bowen Patented Vertical Offset Traveler has proved its worth in the twisting of cords and plys. Based on the true mechanical principle of taking a diagonal position with relation to the ring, presenting a bearing surface over the full width of the Traveler. This design prevents gripping or binding—gives an even tension—an evener rounded product —longer life to the traveler. Send for samples and prices.

U. S. RING TRAVELER CO.

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SALES REPRESENTATIVES:

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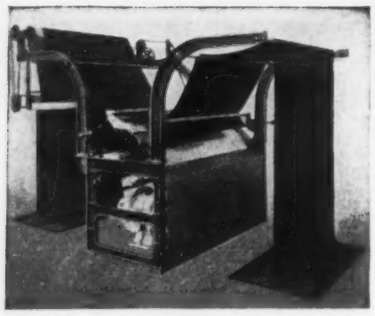
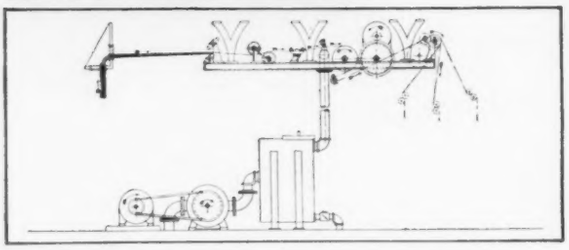
A Traveler for Every Fibre



TWO EFFICIENT METHODS OF EXTRACTING WATER OR ACIDS FROM YOUR FABRICS

Gessner offers you two efficient methods of extracting water or acids. One is by means of a vacuum extractor. The second is by means of hydraulic rubber squeeze rolls.

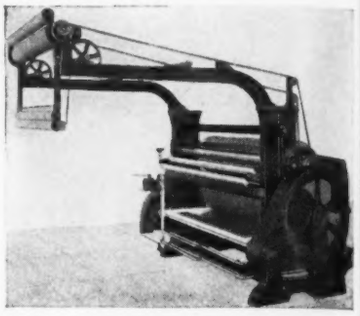
Both methods compared to centrifugal removal, have the advantage of uniformly extracting water or acid from the cloth in open width to eliminate wrinkles and creases. Each method has its own peculiar advantages and disadvantages according to particular conditions. We will be glad to discuss which method best fits your problem.

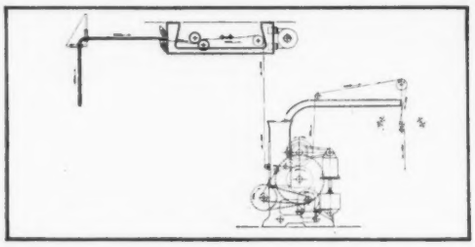


TOP: Gessner Vacuum Extractor.
LOWER: Extractor and Scutcher shown in combination.

VACUUM EXTRACTORS, GIGS, SCUTCHING MACHINES, SPOT PROOFING MACHINES, BRUSHES, PRESSES, DECATING MACHINES, DECATING APRONS, NAPPERS

RIGHT: Squeezing Machine.
BELOW: Gessner Squeezing Machine and Scutcher in combination.





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The Foster Model 75 winder does full justice to your silk and rayon yarns. Its uniform precise wind brings out inherent quality; slow starting device prevents stretching; ample safeguards eliminate oil spots.

And there is no more economical machine for winding delicate costly yarns.

Foster Model 75's will keep waste down in your mill and will help to make your yarns more salable.

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FOR WINDING SILK AND RAYON YARNS

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The Standard Conveyor Company with trained, experienced men in offices in fifty-four principal cities in the United States is the leading organization of its kind for nation-wide service in conveyor engineering.

No matter how large or how small your conveying job may be—you'll find it pays to consider the recommendations of a Standard Conveyor engineer.

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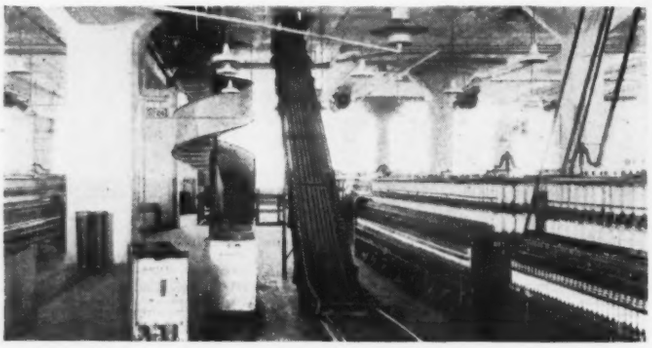

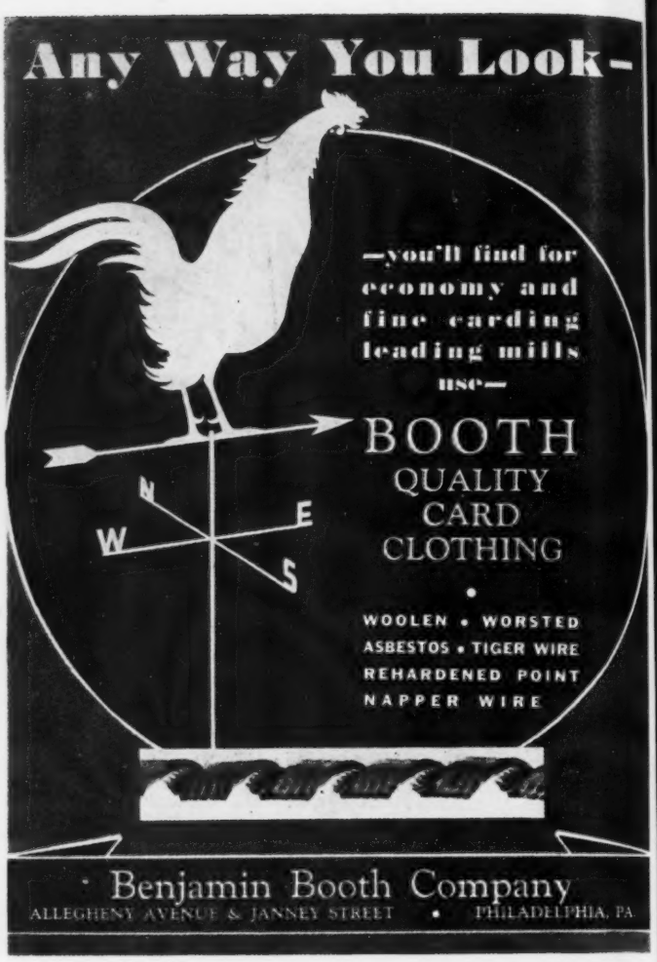

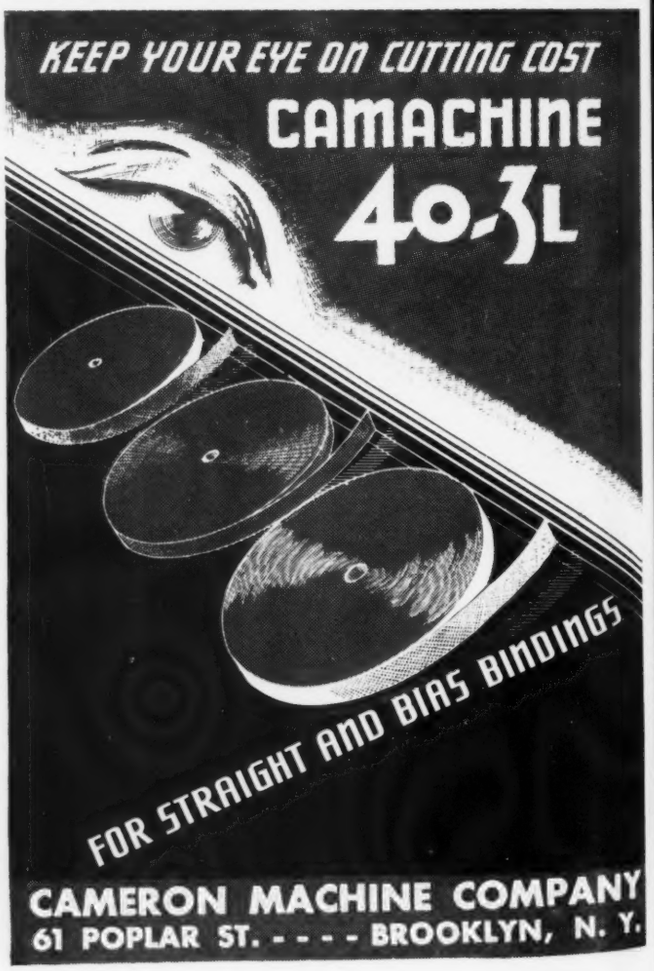
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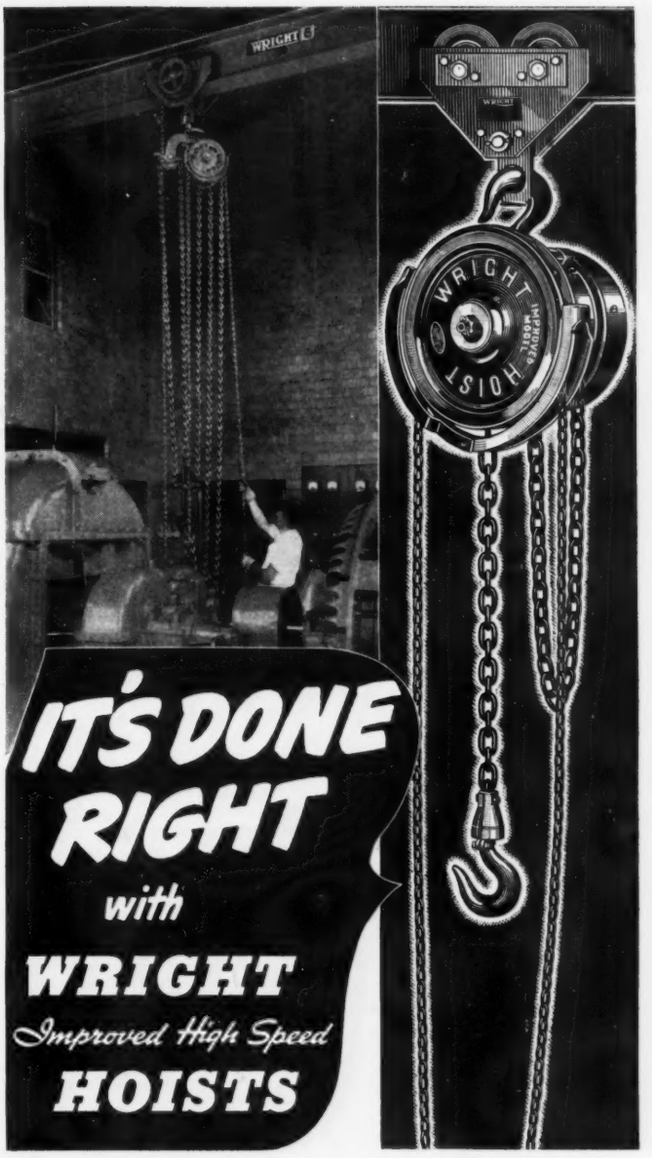

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PERCY A. LEGGE *Sales Agent*

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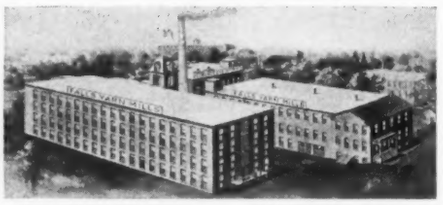
Incorporated 1904



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Rayon Noils . . Staple Fibre

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158 Summer St. Boston, Mass.

THOS. WOLSTENHOLME SONS & CO. INC.

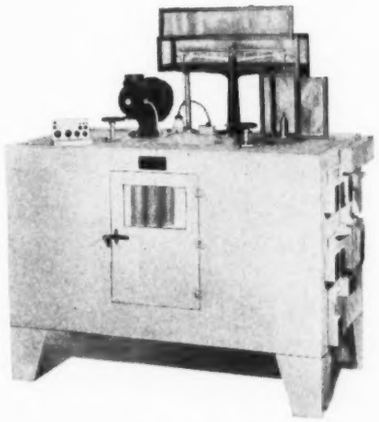
3300 Frankford Avenue
Philadelphia, Pa.

Yarns for all purposes

French and English Spun Worsted
French Spun Zephyr
French Spun Merino

Representatives:—
BOSTON—Perkins & Boland, Inc., 99 Chauncy St.
LOS ANGELES—Arthur Bone, 4436 Worth St.
CHICAGO—C. F. Peffer, 222 W. Adams St.

SAFE! Emerson Ovens are electrically heated and controlled. Can be left operating several hours without scorching of samples. Great convenience for busy operator with other duties.



10-Basket Oven

EMERSON APPARATUS COMPANY
177 Tremont St., Melrose, Mass.

Prevent "Seconds"

NON-FLUID OIL saves its own cost many times over in 7 out of 10 mills.

Drip-less and waste-less NON-FLUID OIL stays in bearings, outlasting oil 3 to 5 times and also reduces oil and application cost.

Write for free testing sample and instructive bulletin

New York & New Jersey Lubricant Co.
***Main Office:* 292 Madison Ave., New York, N. Y.**

Southern Agent, Falls L. Thomason, Charlotte, N. C.

WAREHOUSES

Chicago, Ill. Providence, R. I. St. Louis, Mo. — Detroit, Mich. — Atlanta, Ga. Charlotte, N. C. Greenville, S. C.

TRADE MARK REGISTERED
NON-FLUID OIL
IN U.S. PAT. OFFICE & FOREIGN COUNTRIES

MODERN TEXTILE LUBRICANT

Better Lubrication at Less Cost per Month

THE OLDEST AND LARGEST
MANUFACTURER OF
Ring Spinning and Twister Travelers

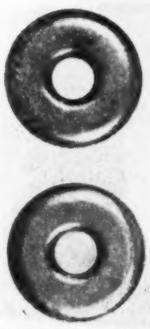
NATIONAL RING TRAVELER CO. PROV. R.I. U.S.A. WENTWORTH GRAVITY TRAVELER

In the UNITED STATES
American • Hicks • Wilson
United States Standard
Wentworth Double Duty and Gravity Travelers

MAKE STRONGER YARN

Write Us
National Ring Traveler Company
PHILIP C. WENTWORTH, *Treas.*
Providence, R. I. Charlotte, N. C.

TENSION DISCS



For more uniform tension and longer wear, use "WAYNE" Tension Discs.—Made of hardened steel and hard chromium plated.

WAYNE MFG. CO. HONESDALE, PENN.

COTTON WARPS

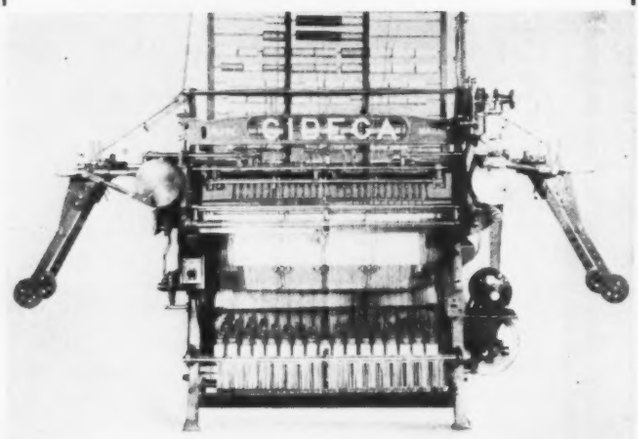
Cotton Yarn and Warps . . Single or Ply . . White or Colored . . Carded . . Combed

Novelty yarns—of cotton, worsted, wool, mohair, rayon, silk—in all fashionable combinations and effects and in many original effects. Write for samples.

Sell Direct

Dana Warp Mills . . Westbrook, Maine

YES . . .



for RAYON, too!

● In fact it just dotes on rayon—this Cidega Knitting Loom.* Feed it rayon—and it clicks away at a clip of 110 R.P.M., purring in the process. Net curtains, bedspreads, draperies, fringes, braids, sport belts, pocketbook materials . . . all-rayon or part-rayon fabrics . . . Cidega Knitting Looms indiscriminately produce them all, *quietly, rapidly, efficiently.*

Of-course, it handles other yarns as well—*cotton* or *wool* or *worsted* or *straw* or *cellophane* or *soutache* or *elastics*—or any type of yarn your products require.

Wide fabrics or narrow, coarse knits or close, heavy bathmats or fine curtains, novelties or staples—Cidega bats them out with precision and speed.

That's why Cidega is known as the *versatile* textile machine. Explore its endless possibilities! Your request will bring all the details.

WORLD-WIDE DISTRIBUTION
CABLE ADDRESS "CIDEGAINC"

*Reg. U.S. Pat. Off.

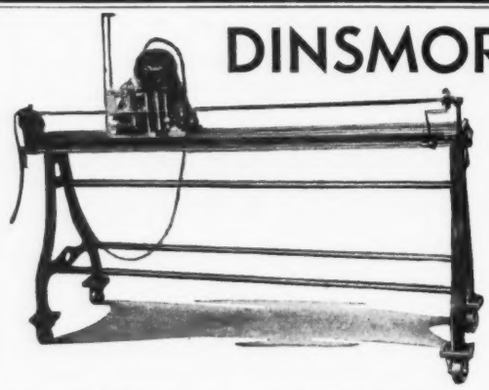
CIDEGA
MACHINE SHOP, INC.
141 West 20 Street New York, New York

CHARLES COOPER CO., INC.
Bennington, Vermont
Manufacturers of
Quality LATCH and SPRING-BEARD

NEEDLES

also
Manufacturers of **THE FAMOUS COOPER CIRCULAR SPRING-NEEDLE RIB KNITTING MACHINES**

DINSMORE



No. 11

Portable Automatic Motor Driven Railway Machine

with Merrow Butted Seaming Head Applied

Built for any width or thickness of goods

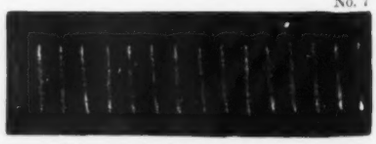
Fitted with our new Automatic Stopping Device which stops the Sewing Head at end of each seam and prevents the breaking of needles, etc., for over-running.

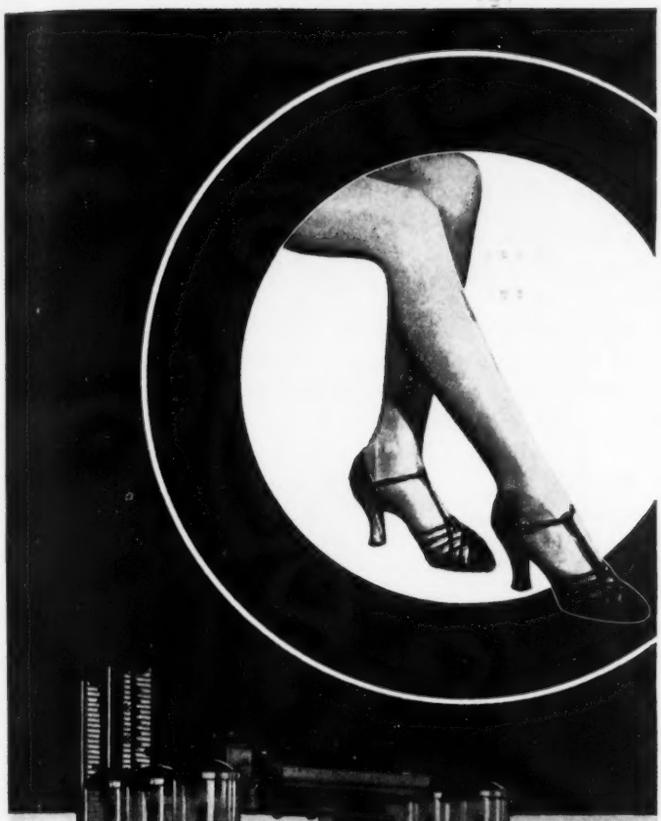
No adjustment for different widths of Cloth necessary and an even stretch of Fabrics obtained with considerable saving in time.

Can be furnished on short legs for setting on benches or tables and can be easily applied to your present machines.

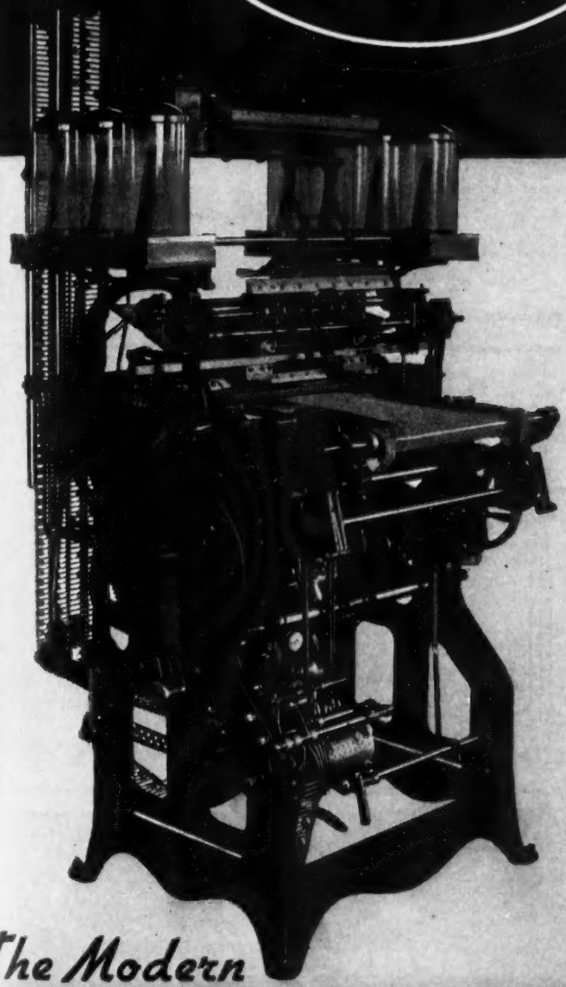
No. 7

DINSMORE MFG. CO.
SALEM, MASS.





ONE Machine, ONE Operation for Stocking PERFECTION



Even the best leggers and footers are sometimes like relatives who don't speak. Only YOU know how much bad matching costs in your plant; how many rejects and seconds are thus caused. The WILDMAN Single-head, Single-unit machine knits the entire stocking in ONE operation, perfect from top to toe. It embodies lots of other mechanical and product quality advantages. May we tell you about this modern machine?

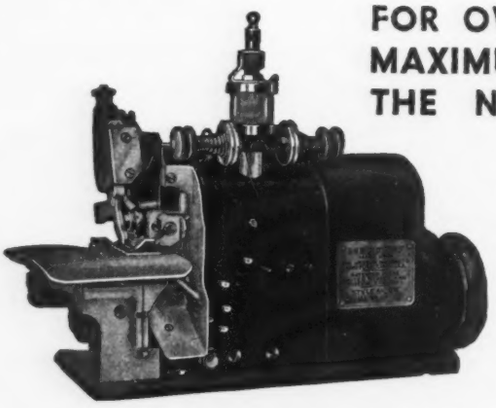
WILDMAN MANUFACTURING CO.
Norristown, Pa.

WILDMAN
THE WORLD'S STANDARD

The Modern

WILDMAN SINGLE-HEAD, SINGLE UNIT FULL-FASHIONED HOSIERY MACHINE

Established 1838 **MERROW** **Incorporated 1894**



FOR OVERSEAMING AND OVEREDGING WITH MAXIMUM EFFICIENCY — MODERNIZE WITH THE NEW MERROW CLASS A MACHINES

The result of several generations of specialized effort in the industrial sewing machine field—combining quality production with high speed and low operating cost to a greater degree than ever before.

WRITE FOR DETAILS AND LET US DEMONSTRATE THESE MACHINES ON YOUR OWN FABRICS.

ALSO PLAIN CROCHET AND SHELL STITCH MODELS FOR ORNAMENTAL EDGE FINISHING AND CLASS 60 MACHINES FOR BUTT SEAMING

200 VARIETIES FOR 200 PURPOSES

THE MERROW MACHINE COMPANY

Starting Its Second Century

2803 LAUREL STREET HARTFORD, CONN., U. S. A.

Acme Products

for seamless hosiery knitting

Speak for themselves

Up-To-Date Machines

Needles

Economy Makers

ACME KNITTING MACHINE & NEEDLE CO.

FRANKLIN, N. H.

RALPH E. LOPER CO.

INDUSTRIAL ENGINEERS

Specializing in Textile Costs and Operating Methods for More Than a Quarter of a Century

COST SYSTEMS
WORK LOAD STUDIES
PAY ROLL CONTROLS
COST REDUCTION SURVEYS
SPECIAL REPORTS

FALL RIVER, MASS. GREENVILLE, S. C.

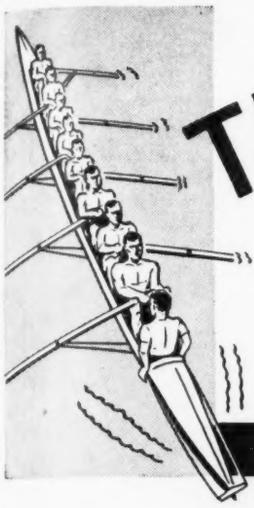
THE LOYAL T. **IVES** COMPANY EST. 1874

SPRING BEARD KNITTING NEEDLES

For Circular, Full Fashioned, Tricot and Milanese Knitting Frames, also Narrowing, Stand, Transfer Points and Welt Hooks for Full Fashioned Machines; Slides, Sinkers, Jacks, Guides or Flat Eyes, Sley and Milanese Points, Transfer Points or Quills, etc.

Sheet Metal Specialties to Order

NEW BRUNSWICK NEW JERSEY



TEAM WORK

COORDINATE THE SALES APPEAL

IN *Your* PACKAGING

Old Dominion maintains an art department and a creative staff for developing both individual and coordinated package designs. This service is yours without obligation.

Teamwork in the packaging of a line of products is as productive of success as it is in a crew race.

Each unit contributes its share to attaining the ultimate objective — mass brand recognition.

Through coordinated packaging the effect of advertising is carried over from advertised to non-advertised items.

Old Dominion Box Co., Inc.

LYNCHBURG, VIRGINIA

Martinsville, Va. · Charlotte, N. C. · Kinston, N. C.
Winston-Salem, N. C. · Burlington, N. C. · Asheboro, N. C.

TOMPKINS

CIRCULAR SPRING NEEDLE

KNITTING MACHINES

FOR PRODUCING

UNDERWEAR	OVERCOATS
SWEATERS	TERRY CLOTH
SWEAT SHIRTS	STRIPED CLOTH
DRESS CLOTH	PATTERNS

RUBBER LAY-IN FABRICS

CIRCULAR LATCH NEEDLE

KNITTING MACHINES

FOR PRODUCING

TOQUES	SCARFS
PARKAS	SHAKER CAPS

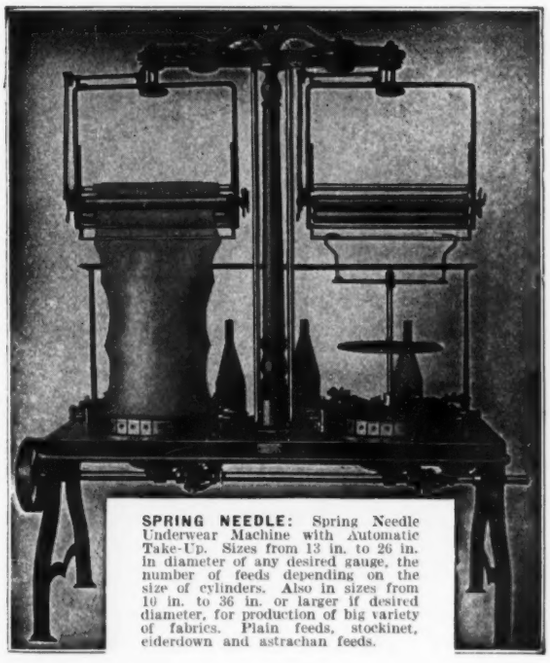
TOMPKINS BROS. CO.

SINCE 1846 — SYRACUSE, N. Y.

CRANE

KNITTING MACHINES

meet the need for Speed — for Quality and Low Cost



SPRING NEEDLE: Spring Needle Underwear Machine with Automatic Take-Up. Sizes from 13 in. to 26 in. in diameter of any desired gauge, the number of feeds depending on the size of cylinders. Also in sizes from 10 in. to 36 in. or larger if desired diameter, for production of big variety of fabrics. Plain feeds, stockinet, elderdown and astrachan feeds.

CRANE Knitting Machines meet the demands of rapidly changing patterns and styles. Their middle name is *versatility* . . . plus smooth, fast running operation that eliminates expensive stops. Among their exclusive features are Patented hardened Wing Burr Wheels and patented Thread Stop Motion. There's many a Knitting Mill in which batteries of Cranes are the mainstay of production.

Let us tell you why —and how . . . just ***WRITE***

CRANE Improved Automatic 3 Colored

Improved Automatic 3 Colored Plain Stripes. Made in sizes from 7⅝ in. to 20⅝ in. inclusive, of any desired gauge. Measurements are back to back of cylinder needles. Knit fabrics for bathing suits, theatricals, athletic goods. Crawford stop motion applied when requested.

1870 **CRANE** 1940

MANUFACTURING CO.

LAKEPORT, N. H.

Spring Latch Needle

KNITTING MACHINERY

IMPROVE THE APPEARANCE AND HAND OF YOUR . . .

Rayon

Use *Laurel* Rayon Oils and Finishes

Developed to meet the specific requirements of rayon filament and staple, Laurel Rayon Oils and Finishes impart the desirable softness, smoothness and drape that win consumer approval and sales.

Our technicians and Research Laboratory work closely with the mills all year round. Among their recommendations for better processing are

Laurel **Rayon Oils** for higher winding efficiency and faster yarns.

Laurel **Rayon Sizes** for smoother warps.

Scourtex for cleaner fibers and fabrics and clearer dyeing.

Olitex . . for softer finish and full hand on dyed rayons.

Our technical men will be glad to go over your particular problem with you and recommend the Laurel processing agents which will produce the specified finish with the minimum of time and effort. Write today.

Laurel

SOAP MANUFACTURING COMPANY, INC.

Wm. H. Bertolet's Sons *Established 1909*
2606 E. Tioga Street Philadelphia, Pa.
Warehouses: Paterson, N. J. Chattanooga, Tenn. Charlotte, N. C.

PENICK & FORD, LTD.,
INCORPORATED

CORN STARCHES, DEXTRINES, GUMS, CORN SUGARS & SYRUPS
NEW YORK, N. Y. - - - - CEDAR RAPIDS, IOWA
SOUTHERN OFFICES: ATLANTA, GA. - - - - SPARTANBURG, S. C.

John: Let's order new Douglas Spunray Gum for warp sizing spun rayons, spun acetates and mixtures.

Understand protects yarns like standard starches yet desizes completely in soap and water.

Jim

NEW LIGHT ON YOUR CLEANING JOBS

CLEANS FRAMES THIS FASTER, EASIER OAKITE WAY!

Cleaning greasy gears, frames and other drying machine parts required considerable scraping in one New England mill until steam cleaning the Oakite way was tried.

Now . . . the job is done in far less time. For a solution of the recommended Oakite material applied with the Oakite Solution-Lifting Steam Gun quickly, thoroughly removes grease and dirt accumulations. Tedious, time-consuming scraping and scrubbing are ended . . . cost is gratifyingly low!

Would you like to make similar savings in cleaning drying machines, dye vats and other equipment? Then write today for FREE booklet describing the Oakite Solution-Lifting Steam Gun.

OAKITE PRODUCTS, INC., 42 Thames St., New York, N. Y.
Representatives in all Principal Cities of the U. S. and Canada

OAKITE *Certified* **CLEANING**
MATERIALS & METHODS FOR EVERY CLEANING REQUIREMENT

AMTEX 320

LATEST ACHIEVEMENT

in Chemical Compounds for

CLEANSING

PENETRATING

SEMI-BLEACHING

RAW STOCK, YARNS, PIECE GOODS, HOSIERY, SILK, RAYON, COTTON, WOOL, AND MIXTURES

Amtex gives softer feel and handle, greater absorbency, greater receptivity to dyes. Its speedier action saves time, effort, steam, and cost.

A SOUTHERN HOSIERY MILL, which ordered 25 barrels, wrote us: "Frankly, it is the most satisfactory product of its particular character or type that we have ever used and is especially adapted as a cleaner and solvent particularly in preparation for dyeing three-color work of one-bath method. The product is all that it is represented to be and more."

Write for complete information

AMERICAN TEXTILE CHEMICAL COMPANY

36 PLEASANT ST.,
WATERTOWN, MASSACHUSETTS

TENESOL

FOR YARN CONDITIONING • FOR TWIST-SETTING

Tenesol is a new conditioning agent for textile yarns. Used in dilute solution in water, its rapid wetting action affords a complete regain in a minimum time. Tenesol may be used in all types of Conditioning and Twist-Setting machines. Tenesol is inexpensive to use.

BURKART-SCHIER CHEMICAL CO.

CHATTANOOGA, TENNESSEE

MANUFACTURING CHEMISTS FOR THE TEXTILE INDUSTRY

Burkart-Schier Chemical Co.
Chattanooga, Tenn.

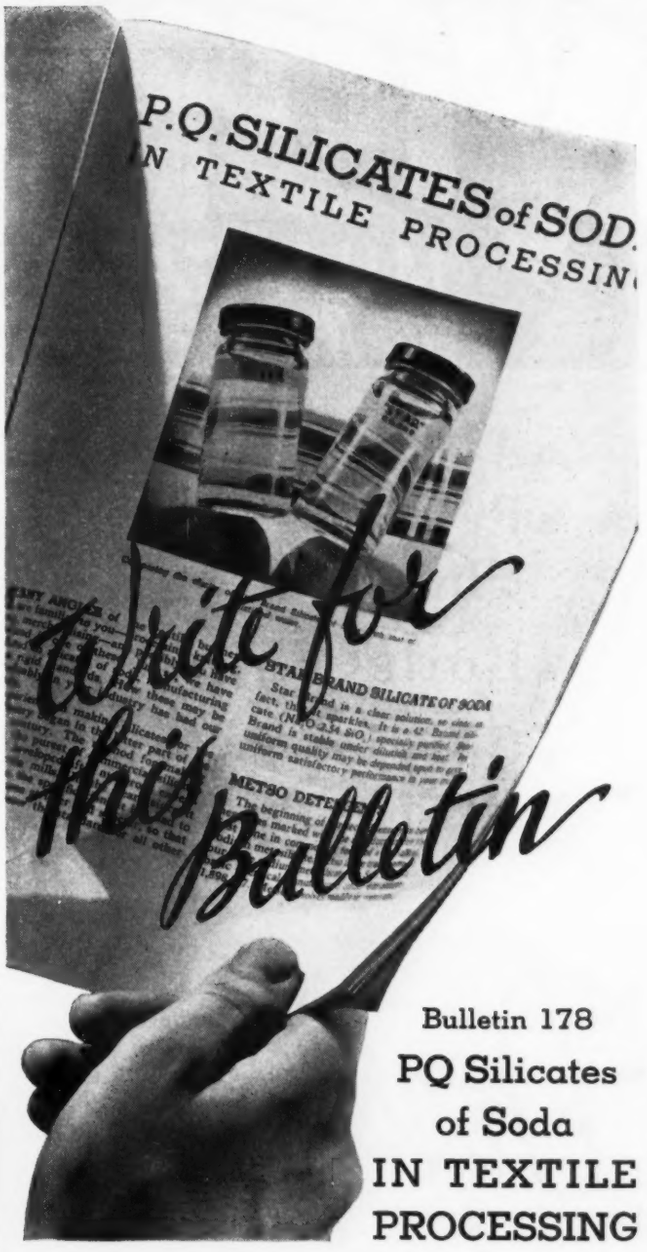
Please send TENESOL booklet and sample.

Name_____

Company_____

Address_____

City_____ State_____



Bulletin 178

PQ Silicates of Soda IN TEXTILE PROCESSING

HERE you find answers to questions like—How can bleaching efficiency be increased and costs lowered? What is an economical coating for kiers?

Read how the life of back grays can be doubled, how rayon scouring results are improved and time saved.

A request on your letterhead brings you a copy without obligation.

PQ Silicates of Soda available from nine plants and distributors' stocks in 65 cities.

PHILADELPHIA QUARTZ COMPANY

General Offices & Laboratory: 125 S. Third St., Phila., Pa.
Chicago Sales Office: 205 W. Wacker Drive. Stocks in 65 cities.
Sold in Canada by NATIONAL SILICATES LTD., Toronto, Ont.

SILICATES OF SODA

VICTOR
MILL STARCH
"The Weaver's Friend"

- Always Uniform
- Penetrates Thoroughly
- Boils Thin
- Carries Weight Into the Fabric

Dependable

· *Distributed by*

CLAUDE D. ILER
Southern Manager
GREENVILLE, S. C.

J. C. ATTAWAY
GREENVILLE, S. C.

F. M. WALLACE
HOMEWOOD, BIRMINGHAM, ALA.

L. J. CASTILE
CHARLOTTE, N. C.

The KEEVER
STARCH COMPANY
COLUMBUS, OHIO

UNIFORM
Soft Water ASSURES UNIFORM COLORS

Protect the product of your mill with pure, soft water delivered by **GRAVER Water Treating Equipment.** Uniformity of water quality is your best insurance against unevenness in dyeing fine fabrics. For complete details on Graver Equipment, write Graver Tank and Mfg. Co., Inc., Dept. 5, East Chicago, Indiana.

GRAVER TANK & MFG. CO., INC.
OVER THREE QUARTERS OF A CENTURY OF DEPENDABLE SERVICE
NEW YORK CATASAUQUA, PA. EAST CHICAGO, IND. CHICAGO TULSA
CABLE ADDRESS—GRAVEX

D. R. KENYON & SON
RARITAN, N. J.

TENTERING and DRYING MACHINERY

ROME SOAP MFG. CO.

MANUFACTURERS OF
Textile, Laundry
and
Special Soaps
ROME, N. Y.

WRITE US FOR SAMPLES AND QUOTATIONS

"MEON"

The WONDER *Product*

MEON "T" for conditioning cotton yarns is more than a penetrant or wetting agent. MEON "T" is hygroscopic, and by virtue of its property of breaking down surface tension, insures rapid absorption. MEON "T" permanently sets the twist and removes the kinks. Any amount of water can be imparted and retained by the use of MEON "T". Therein lies a *tangible value* for the manufacturer. . . .

Can be used in

ANY CONDITIONING MACHINE

1 gallon MEON "T" to 99 gallons water

- INSURES SMOOTH WEAVING
- INCREASES BREAKING STRENGTH
- A RUST INHIBITOR
- WILL NOT AFFECT THE BOBBINS
- ECONOMICAL • EFFICIENT

Use it on your Tyeing-in Machine

BORNE SCRYMSER COMPANY

Originators of the BRETON MINEROL PROCESS for FIBRE CONDITIONING

ESTABLISHED 1874

17 BATTERY PLACE, NEW YORK • 815 WEST MOREHEAD ST., CHARLOTTE, N C

DRAPER SOAPS are Dependable Soaps. For a great many years the J. O. Draper Company has been supplying the textile industry with better soaps for finishing processes.

DEPENDABLE

The industry has come to realize that the phrase *"Depend On Draper"* is not just an advertising slogan, but a fact that is of real help in the production of better cloth.

Write for literature and prices.

J. O. DRAPER Co.

PAWTUCKET, R. I.

"Low Prices Never Bought Quality"

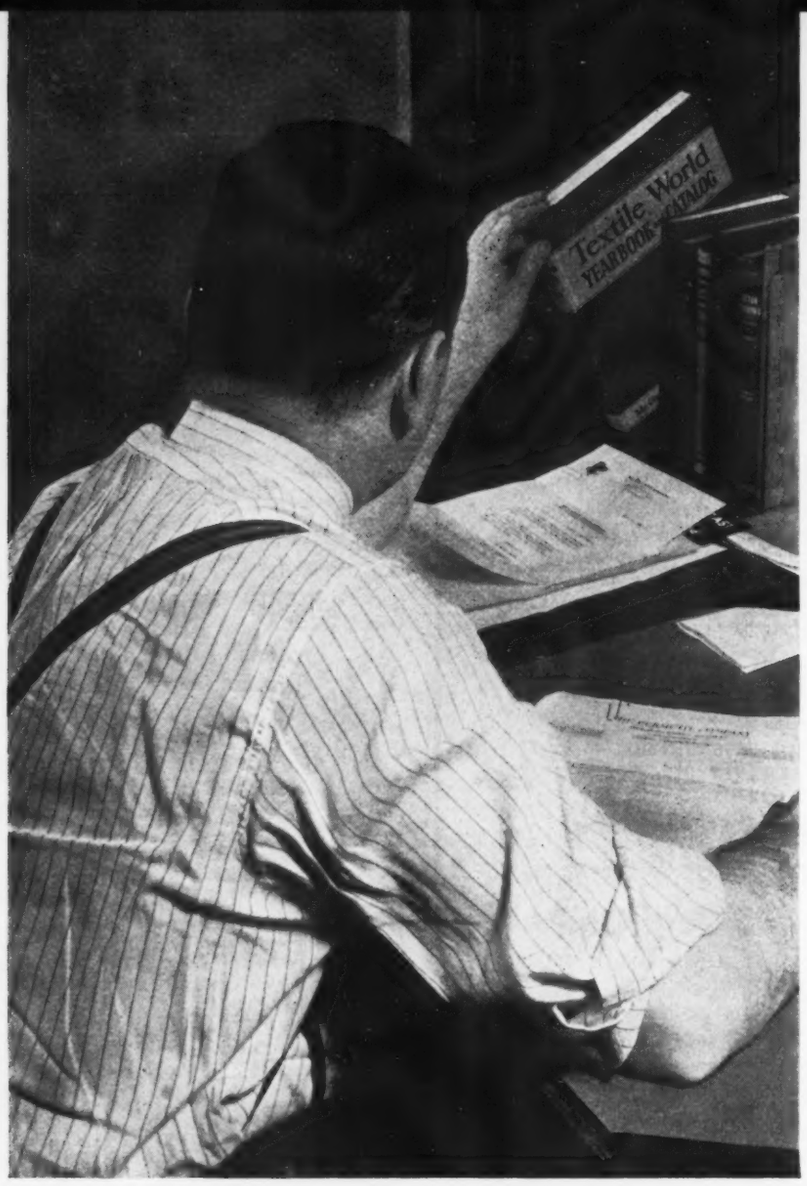
See-worthy:

Legs slim, sleek, gossamer-clad in hosiery *DuraBeau* finished . . The silk made dull, sheerer-looking, exquisitely soft and fine in texture. .The stocking made enduringly resistant to snags and runs and water spots.

With these advantages, sale-ing need not clip retail profit margins . . Sheer allure keeps *DuraBeau* finished brands moving, without markdowns, almost without effort.

DuraBeau Hosiery Finishes are a product of SCHOLLER BROS., INC., *Manufacturers of Textile Soaps, Softeners, Oils, Finishes; Collins and Westmoreland Sts., Philadelphia, Pa.; St. Catharines, Ontario, Canada.*

PHOTO BY HAYMAN • APPAREL FROM BONWIT-TELLER • NAUTICAL ACCESSORIES—ELISHA WEBB & SON



A Good Plank For *Your* Buying Platform

BUYERS of textile machinery, equipment, supplies, dyestuffs and chemicals always give the TEXTILE WORLD YEARBOOK AND CATALOG an important place in their buying platform; but now, more than ever before, because of the great need for a mass of buying information in a hurry.

Whenever *you* are in need of product or company information to fill the requests of various department heads in your mill, just reach for the "looking up place" of the textile industry.

It will help you make your buying contacts in minimum time without delays due to lengthy, time-consuming correspondence.

As you know, the TEXTILE WORLD YEARBOOK AND CATALOG contains almost 200 pages of manufacturers' catalogs giving detailed buying data about their products: sizes, shapes, shipping weights, warehouse points, local sales and service office addresses, etc.; in addition to the Mill Reference Data section which contains so much valuable technical information regarding mill operation and maintenance.

Chances are you'll be busier than ever during the months to come. Save time and energy by reaching for the familiar textile catalog with the orange band which is now in its 18th year of service to the textile industry.

Textile World Yearbook and Catalog

STYLE 28

ROVING TRUCK

LANE

CANVAS

TRUCKS

For the well equipped mill

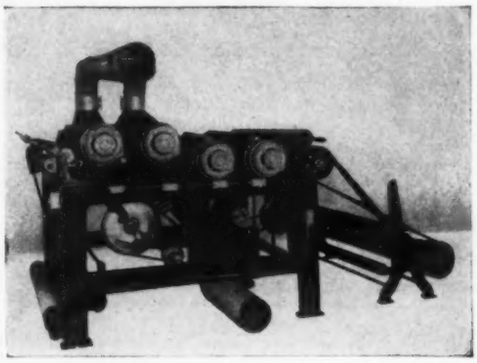
W. T. LANE & BROS., Inc.
Manufacturers, Poughkeepsie, N. Y.

H. G. LORD *comments on*

Another Rayon Milestone

See page 6

for BETTER and FASTER SHEARING



TYPE CMR AUTOMATIC SHEAR

for Spun Rayons, Rayons, Cottons and Silks

Patented Automatic Seam Protector
Built-in Motors for the Cutters
Improved Built-in "Vibrate" Motion
Adjustable Selvage Cones, Etc., Etc.

Over 150 of *this latest type* are now giving superior results in many mills.

Write or wire us for further details.

CURTIS & MARBLE MACHINE CO.
WORCESTER, MASS.

WE'VE LEARNED A LOT IN OUR 50 YEARS!

50 years of specialized experience in producing tanks and tubs for the textile industry *has taught us some things that will be valuable to you!*

Let us tell you about our complete Caldwell service, which includes Stainless Steel-lined tanks and tubs—round, rectangular and special shapes. *Catalog on request.*

W. E. CALDWELL CO.
Incorporated
2060 Brook St. Louisville, Ky.

Caldwell TANKS AND TOWERS

LIQUID LATEX

• *Normal and Concentrated* •

Agents in U. S. A. for Dunlop Concentrated 60% Latex, product of Dunlop Malayan Estates, Ltd.

CHARLES T. WILSON CO., Inc.

99 Wall St., New York City

Boston Rep.
Ernest Jacoby & Co.
79 Milk St., Boston, Mass.

Akron Office
803 United Bldg.
Akron, Ohio

Pacific Coast Rep.
J. B. Ruth & Co.
124 South Central Ave.
Los Angeles, Calif.

SEARCHLIGHT SECTION

EMPLOYMENT • BUSINESS • OPPORTUNITIES • EQUIPMENT—USED or RESALE

UNDISPLAYED RATE:

10 cents a word, minimum charge $2.00.
(See ¶ on Box Numbers)

Positions Wanted (full or part-time salaried employment only), one-half the above rates.

Proposals, 50 cents a line an insertion.

INFORMATION:

Box Numbers in care of our New York, Chicago or San Francisco offices count 10 words additional in undisplayed ads.

Discount of 10% if full payment is made in advance for four consecutive insertions of undisplayed ads (not including proposals).

DISPLAYED—RATE PER INCH:

The advertising rate is $5.50 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.

An Advertising inch is measured ⅞ inch vertically on one column, 3 columns—30 inches—to a page. T.W.

NEW ADVERTISEMENTS received by 10 A.M. October 2nd will appear in the October issue, subject to limitations of space available.

POSITIONS WANTED

(See also "Selling Opportunities Wanted")

NARROW FABRICS—Position wanted as superintendent, narrow and wide elastic fabric; tapes and heavy webbing. Experience includes all departments. PW-770, Textile World, 330 W. 42nd St., New York, N. Y.

FIRST CLASS YARN DYER and Chemist, Ph.D. 50, perfect on Rayon and Cotton, Direct and Fast Colors, wants position. PW-783, Textile World, 330 W. 42nd St., New York, N. Y.

TEXTILE COLLEGE GRADUATE (weaving) 25 years old. Good practical and technical experience, woolen and cotton goods, ideas, adaptable, capable for every work. PW-774, Textile World, 330 W. 42nd St., New York, N. Y.

LOOMFIXER TEACHER available. Twenty years practical experience as fixer, head fixer, and teacher. Expert on bobbin-changing magazines. Draper Model X and C&K worsted and gingham looms. Excellent references. PW-775, Textile World, 330 W. 42nd St., New York, N. Y.

RIBBON OR NARROW FABRIC as superintendent or foreman. Experienced on silk rayon and tinsel, references, willing to go anywhere. PW-776, Textile World, 330 W. 42nd St., New York, N. Y.

SPINNING OVERSEER wants to make change. 20 years experience on all grades and mixes. Married and 38 years old, any locality. Good producer, all details and references on request. PW-778, Textile World, 330 W. 42nd St., New York, N. Y.

PRINTER DYER. Ten years superintendent cotton and rayon finishing plant. Excellent technical background. PW-779, Textile World, 330 W. 42nd St., New York, N. Y.

STYLIST AND SALES-AGENT for upholstery, drapery, slip-cover lines, desires to contact a progressive American mill willing to cooperate in bringing out novelties. With foreign competition now at a minimum today offers a chance to establish a reputation for quality fabrics for a lasting future. Have had many years experience styling the lines for well known European mills and selling the best jobbers, converters and distributors and my knowledge is now available for a large mill on an exclusive selling basis. PW-773, Textile World, 330 W. 42nd St., New York, N. Y.

EFFICIENCY EXPERT. Manager; Foreman: Full Fashion Hosiery Mill. Can organize and train help; keep any make hosiery machines in good condition to produce quality stockings and high production, also loopers and seamers. 25 years experience on plain knit silk, lace, mesh, rayon, cotton and nylon hosiery. PW-780, Textile World, 330 W. 42nd St., New York, N. Y.

ASSISTANT SUPERINTENDENT or Overseer of weaving. Capable of taking full charge. 12 years practical experience in the weaving of novelty and staple fabrics on C&K 4x4, C&K automatic looms. Expert on rayon and combination yarns. Age 32. Will go anywhere. At present time working in South. PW-781, Textile World, 330 W. 42nd St., New York, N. Y.

SUPERINTENDENT, capable designer, over 20 years experience dress, Jacquard, sport fabrics for men and women, box and automatic shuttle changers. Able to step up production and quality. First class references. PW-782, Textile World, 330 W. 42nd St., New York, N. Y.

Over Forty Years of Dependable and Confidential EMPLOYMENT SERVICE for textile mills, converters and selling houses requiring managers, superintendents, stylers, designers, salesmen, overseers, second hands, fixers, etc. 'Phone, wire or write us your personnel requirements.

CHARLES P. RAYMOND SERVICE, Inc.

Phone: Liberty 6547 — **294 Washington Street, Boston, Mass.**

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PLANT ENGINEER: Engineering graduate, experienced as executive in charge all phases textile plant construction, operation, maintenance, associated with properties employing from several hundred to 17,000 men among from one to sixteen individual plants. Consultant on power layouts. PW-785, Textile World, 330 W. 42nd St., New York, N. Y.

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OFFERED—WANTED

Selling Agencies—Sales Executives
Salesmen—Additional Lines

OPPORTUNITIES WANTED

Wanted line of hotel and industrial cotton goods for the Northwest. Will carry jobber's stock. Write RA-772, Textile World, 330 W. 42nd St., New York, N. Y.

REPRESENTATIVE AVAILABLE for line of mill textiles. Now covering South. RA-786, Textile World, 330 W. 42nd St., New York, N. Y.

WANTED

INSPECTION PERCHER Wanted for 46" Cloth. Either Roll or Layer Delivery. Write W-777, Textile World, 330 W. 42nd St., New York, N. Y.

One ten spindle, motor drive, winding machine, from skeins to cones or tubes. Andres Molins, San Salvador, C.A.

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Fully equipped **hosiery tram throwing plant** in Pennsylvania. 5,000 lbs. weekly. Experienced labor available.

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Including

DYEING AND FINISHING

Equipment in Excellent Condition for Immediate Production

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TRUST COMPANY OF FULTON COUNTY

23 North Main St.,
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WANTED

WANTED

KLAUDER WELDON
SKEIN DYE MACHINE
FIFTY POUNDS — MONEL LINED

ROGER REYNOLDS
MENLO PARK, CALIFORNIA

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WHEN answering the classified advertisements in this magazine, don't forget to put the box number on your envelope. It's our only means of identifying the advertisement you are answering.

AT PUBLIC AUCTION
THE REAL ESTATE (with Water Power)
MACHINERY and EQUIPMENT
of the

EAST GLASTONBURY WOOLEN MILL
at EAST GLASTONBURY, CONN.
(about 7 miles from East Hartford)
To Be Sold on the Premises on

THURSDAY, SEPTEMBER 26, 1940
Starting at 10:00 A. M. (Daylight Saving Time)

The Manufacturing Real Estate includes a group of Frame, Concrete and Stone Mill Manufacturing and Storage Buildings having about 62,000 square feet of floor space. With small Water Power and ample Water for Processing Purposes.

A desirable Industrial Property of moderate size in a good location. The Machinery and Equipment includes: Davis & Furber Mixing Picker 48", **Sargent Burr Picker** 48", **Cashiko (Set of 3) Breaker and Finishing Card** 54"x60" **with Cashiko Tape Condenser. 4 Furbush (Set of 3) Breaker and Finishing Cards** 48"x60" **with Cashiko Tape Condenser. 4 Lombard (Set of 3) Breaker and Finishing Cards** 48"x48" **with Cashiko Tape Condenser,** Roy Card Grinders, **5 Johnson & Bassett 300-330-336 Spindle Mules,** 2¼" Gauge, **2 Johnson & Bassett 288 Spindle Mules** 2" Gauge; **3 Davis & Furber 336 Spindle Mules** 2" Gauge, **6 Universal Winders** No. 90, **60 Crompton & Knowles Worsted Looms** 82", 4x4 Box, 25 Harness, Electric Stop Motions.

4 Davis & Furber Dressing Reels 88" and 92", 9 Davis & Furber Spoolers, 40 Ends; **Woonsocket Double Cloth Shear, Parks & Woolson Single Cloth Shears** 66½", **Gessner Steam Cloth Press** 66", Windle Winding and Measuring Machine, **Kenyon Cloth Dryer** 72", Parks & Woolson Sanding and Brushing Machine, **Sargent Raw Stock Dryer,** James Hunter Fulling Mills, Rodney Hunt Washers, **Tolhurst Extractor,** Spools, Harness Frames, Bobbins, Supplies, etc.

Factory Equipment: 30 Electric Motors 2 to 50 H.P., 220 Volts; Portable Electric Elevator, Leather Belting, Box Trucks, Scales, Stencil Machine, Engine Lathes, Saw Tables, Planer, etc.

Note: In addition to the Mill the Real Estate includes Ten Dwellings, One Store, and about 90 Acres of Unimproved Land.

Sale is by order of The Angus Park Woolen Company, Inc., Owners.
Illustrated Descriptive catalog on request.

SAMUEL T. FREEMAN & CO., *Auctioneers*
Established Nov. 12, 1805

1808-10 CHESTNUT STREET PHILADELPHIA | **80 FEDERAL STREET BOSTON** | **27 WILLIAM STREET NEW YORK**

AT ABSOLUTE AUCTION
The
VALUABLE INDUSTRIAL REAL ESTATE
(formerly known as)
THE SUMMIT THREAD COMPANY
ON THE STATE HIGHWAY—NEAR CENTER OF TOWN
EAST HAMPTON, CONNECTICUT
21 miles to Hartford, 30 to New Haven, 94 to New York, 113 to Boston.
to be sold on the premises
WEDNESDAY, SEPTEMBER 25, 1940 at 11:30 A.M. (D.S.T.)

The property consists of approx.: 153,000 Sq. Ft. of land with a group of one, two and three story Frame and Brick modern daylight mill buildings thereon erected, containing about 65,000 Sq. Ft. of floor space. Including power plant, boiler house, coal pocket, mill pond, etc., etc.

The property will be offered first as an entirety, then in 2 separate parcels.

The sale is by order of: BELDING-HEMINGWAY COMPANY (Owners).

For further information apply to

WILCAN & COMPANY
AUCTIONEERS & APPRAISERS
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A COMPLETE FULL FASHION HOSIERY MILL
Located in Northeastern Penna.
CONSISTING OF
THE FOLLOWING MACHINERY:

4—**Schubert & Salzer, 18 section,** 42 **gauge 7 carrier Leggers,** complete with full lace attachments, shock absorbers, Pecot, Pointex, Al Granz 3 carrier attachments, moveable knock-over bits, floating glass moistening rods, serial #68355-6-7-8, motor driven 1¼ hp 3/60/220.
2—**Schubert & Salzer, 20 section,** 42 **gauge 6 carrier Footers,** complete with Pointex 3 carrier attachments, progressive rockers, spring jacks, floating glass moistening rods, serial #68661-68359; motor driven 1½ hp 3/60/220.
2—**Wright steady dial Loopers,** 26 point, serial #116248, #116948.
2—**Record Loopers,** 26 point.
3—**Union special Seamers,** style #41200A.
2—**American safety Tables, for loopers & seamers,** and all other necessary equipment for efficient operation of this plant.

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FOR QUICK ACTION!

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80—Upright flat Knitting Machines to make Army and Navy materials. Such as Blankets, Spirals, Suiting materials. Hat materials. Laundry Bags. Fish Nets. Onion & Fruit Bags. Curtain Materials. Dish Cloths & Towellings and thousands of other items. Exceptionally fast producing machines. Reasonably priced.

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Specialists in Textile Machinery
162 Greene St., N. Y. C.

1—**Lazenby** model K 30 spindle **Winder**
1—**Sargent** Yarn **Conditioning Machine**
4—**P.&W.** mod. A-66½" 2 blade **Shears**
1—**Fletcher** 48" motor driven **Extractor**
2—**P. & W.** 66½ 2 **Brush Machines**
1—**Whitin** model A 3" gauge **Quiller**
1—**Lowell Slasher** 5' & 7' Cylinders
800—**Fibre Box Trucks** assorted sizes
2—**Butterworth Dry Cans** 23 cans ea. 72"x23"
1—**Torrence Sample Card**
1—**Foster** model 25-100 spindle **doubler**
8—**Atwood** Single brush thread **dressers**
6—**D. & F. Dresser** 82", 92" brass plate
1—**Butterworth** 66" 3 burner **Gas Singer**

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Rebuilt Thread Dressing Equipment

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2—GESSNER FULL DECATURS.
3—Semi-Decating Machines, P&W with pumps.
10—SHEARS, P&W, C&M, SINGLE, DOUBLE, VELVET & WOOLEN 40"–80". 3–MODEL A P&W.
4—Clamp Tentering Frames 60"–117" wide.
6—PIN TENTERING FRAMES, STRAIGHT-A-WAY & SINUOUS 60"–130" wide.
10—Extractors 26"–60".
14—NAPPERS, ALL STYLES AND MAKES.
10—Padders, Mangles, Quetches, 50"–66".
2—LOOP DRYERS, REVOLVING STICKS.
3—Knit Goods Conditioners.

Send us a list of your surplus equipment.

WE OFFER FOR SALE

84—CROMPTON & KNOWLES 4x1 box AUTOMATIC LOOMS, 84" between swords, equipped with four-bank stop motion, jacquard heads; motor driven by 1¼ HP 550 volt, 60 cycle, 3 phase motors.
160—40" STAFFORD SHUTTLE-CHANGE LOOMS, 45" reed space, 1925 model. Sacrifice price.
2—WHITIN LONG CHAIN QUILLERS, 189 spindles each; 1925-1931 model.
2—UNIVERSAL #44 ROTO-CONERS; one 100 spindle unit, one 70 spindle unit. Arranged for wooden cones.
6—WHITIN 3¼" gauge TWISTERS, tape drive, 240 spindles each; ind. motor driven.

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Textile Machinery
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12—32" C&K Automatic 4x1 Looms
2—92" C&K 4x4 Box Looms
3—3 Cylinder Woolen Cards 60x48 Cash-Iko Tapes
1—2 Cyl. Shoddy Card 60x60 All Metal
7—Johnson&Bassett H'vy Pattern Mules
1—Universal Winding Co. #90 Winder
1—Curtis & Marble Burr Picker
1—3 Cylinder Woolen Card 60x48 Ring Doffer

Complete Modern Woolen Mill Equipment, including Windle Winding & Doubling Machine, D & F Dressing Frames, International Business Machine Time Clocks, Saco Lowell Hot Air Slasher & Beamers, Saco Lowell Beamers, Stock & Piece Dyeing & Finishing Machinery, Loom Supplies, Motors, Pulleys, Shafting, Belts, also LARGE STOCK OF RAW MATERIALS.

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USED OR REBUILT
Knitters: Ribbers: Loopers: Seamers: Boarding: Dyeing.
Full Fashioned Hosiery Machines
Special attention to export trade

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Burr Wheels, all gauges.
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Lathes, Drill Presses, etc.
Used Textile Machinery of all kinds.

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FOR SALE

2—S-L Bale Breakers, 12' feed aprons
2—S-L Vertical Openers with condenser sections
94—40" Draper Automatic Looms
2—F & J Tape Twisters, 5½" ga., 4½" ring, 132 spindles
3—Barber-Colman Automatic Spoolers & Warpers
3—Foster #30 Cone Winders, 100 spindles
3—Barber-Colman Stationary Warp Tying-in Machines

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TEXTILE MACHINERY OF ALL TYPES
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BOBBINS — SKEWERS — SPOOLS — SUPPLIES
New and Used, Reclaimed, Repaired, Refinished
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HEDDLES & MOTIONS
2,000,000 12" Doupe Heddles
500 Leno Motions
Will sacrifice for quick sale
BOOTH MANUFACTURING COMPANY
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FOR SALE
Automatic Loom Triptods
400 M 7¼" Automatic Loom Triptods. Price and samples upon request.
Address:
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An advertiser writes:

"It will interest you to know that we received our first order from the ad . . . the day after the paper came out.

Other inquiries have of course followed but we are surprised and pleased at the immediate response to our advertisement."

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"We are more than pleased with the results from our ad in the Searchlight Section of Textile World. It looks as if everything advertised will be sold through deals just about closed."

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Departmental Advertising Staff
TEXTILE WORLD
330 West 42nd St., New York City

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FINISHING PLANT (Mill No. 2)

Complete Equipment for Dyeing & Finishing Rayon, Worsteds & Mixtures.
56—Rice Barton & Fales-Butterworth Stainless Steel Dye Jigs 45" to 60".
15—Riggs & Lombard Stainless Steel Dye Kettles.
24—Wood Dye Kettles.
3—Full Width Open Washers and Boil Off Units.
8—Continuous Washers and Crabbs.
16—Rubber roll Padders, Mangles, Quetches, 50 to 72" face.
4—Suction Extractors, Nash Pumps.
1—48" Open Top Centrifugal Extractor.
7—Rope Washers.
2—Fulling Mills.
2—Scutchers 64 to 78" face.
2—Laundry Washers
3—90' clip Tenters with Housing.
2—Butterworth 60' Open Clip Tenter Frames.
6—Heathcote Pin Tenter Dryers.
7—Perkins and Butterworth Hydraulic & Finishing Calendars.
2—Loop Dryers, revolving sticks.
2—Semi-Decaters.
1—Morrison-Palmer Quetch Tenter Unit.
6—Copper Can Dryers, 6 to 23 Cans.
6—Shears 2 to 4 Blade, 50" to 66".
4—Singers 40 to 68".
4—Cloth Finishing Presses.
1—36 Roll 90" Woonsocket Napper.

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LOOMS

All Motor Driven and complete

48—C & K 4 x 1 Automatic Looms, 82". 1933.
300—Draper Modified "D" Looms, 47½" Reed Space, 150 picks per minute.
100—Draper Modified "D" Looms, 69½" Reed Space, 130 picks per minute.

RAYON EQUIPMENT

13—No. 90 Universal Winders.
1—57½" 5-Can Cocker Slasher. 1937
1—Barber Colman Portable Tying-in Machine, Type L.L.
6—Hermas 60" Inspecting Machines, motor driven.

WORSTED EQUIPMENT

11—Sets, 7 operations Worsted Drawing.
106—Spindle Ring Spinning Frames, 2¾" ring and 1¼" ring.
123—160 Spindle Cap Spinning Frames; self doffers.
2—Prince Smith 200 Spindle Tape Drive Twisters. 3" ring, 8" Traverse.
2—96 Spindle Model 60 G.F. Universal Tube Winders. 1933.
1—100 Spindle Model 56 B Foster Cone or Tube Winder. 1936.
3—Slashers.
3—250 Gallon-Size Tanks.

SUPPLIES

19,000 Heddle Frames 13" & 10".
2—Million Heddles 13" & 10."
3—Million Bobbins, Practically new
10,000 Reeds.
212,000 Spools, all sizes.

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REPRESENTATIVE ON PREMISES—ARRANGE TO INSPECT

Above Excellent Equipment priced low for immediate disposal.

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CONSOLIDATED PRODUCTS CO., INC.

Telephone Holyoke 7323 — **HOLYOKE MASS.** — **Cable Equipment, N. Y.**

WE OFFER FOR IMMEDIATE SALE

1—Universal #8 Single Head mounted on column
1—80 Spindle Foster #25 doubler
6—Luther Single Brush Thread Dressers
1—12 Spindle Atwood Semi-Automatic Spooling Table
2—Foster #75 Cone Winders equipped with Measuring Devices
1—Universal #10—10 spindle Winder

5—Brown & Sharpe 120 yd. Yarn Reels
1—Alfred Suter 120 yd. Yarn Reel
1—Alfred Suter Single Strand Strength Yarn Tester
1—Alfred Suter Twist Tester with 5" Take-up
2—Alfred Suter Twist Testers with 5" Take-up
1—Scott 20" Twist Tester
1—Alfred Suter 12" Twist Tester
3—Brown & Sharpe Grain Scales
3—Southworth Humidifiers

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also, our regular reconditioned and guaranteed stock of Universal #50 and #90 winders, Foster #12 winders, Oswald Lever Bottle Bobbin Winders, Atwood skein winders, Atwood spinners, Easton & Burnham Skein winders and Atwood 5B Spinners.

Gaines Textile Machinery Co.

141 W. 17TH ST.

NEW YORK CITY

FOR SALE

1—Saco-Lowell Kitson #5 34" Feeder.
4—Kitson 38½" Hopper Feeders.
1—Sargent Hopper Feeder for waste with Sargent Comb.
1—Kitson Saco-Lowell Feed Table, 33 ft.
4—Saco-Lowell Vertical Openers.
1—Saco-Lowell No. 6 Condenser and No. 7 Sturtevant Fan.
1—Saco-Lowell #10 Condenser.
1—No. 7 Sturtevant Ball Bearing Fan, Universal type.
2—Heads Saco-Petee Drawing, 4 deliveries per head, 12" coilers, metallic top rolls.
1—Lowell Size Kettle 32x32.
1—Singer Tape Sewing machine, portable.
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4—Sets Dronsfield Card Grinders for 40" Whitin cards.
4—Sets S. L. Card Grinders.
13—Fancies for Whitin 40" cards, complete with pulleys, gears, girts, and all parts to change standard card to fancy card.
14—12" Coilers.
35—Veeder-Root Day & Night Pick Counters with driving worm.
10—Veeder-Root two-shift reset type Pick Counters for C. & K. heavy worsted looms.
250—Porcelain Bleachery Rings.

95 BRIDGE STREET GEORGE F. LANGEVIN LOWELL, MASS.

HOSIERY MACHINERY

24 Banner Wraps 3½-220 N.
150 S. & W. B-5's, with stripers, etc.
15 Spiers AutoSwift, 176 N.
500 Banners 2¼" to 4" all gauges
24 Reading 42 gauge 20 section Full Fashion Machines
8 S. & S. (HSL) 42/24 section with 28 section footers
700 Paramount & Philadelphia Boarding Forms assorted styles
15 Extractors, Fletcher, Tolhurst and other types

Largest stock of good used hosiery equipment in the country.

MORRIS SPEIZMAN

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No. 50 Universal Winders, L drive or clutch drive. Belt or Gear Gain.
No. 90 Universal Winders 4 spdl-20 spdl.
1—80 spdl Atwood Winder.
1—120 spdl Sipp Winders oilless spdl bkts.
1000—Fibre Head Bobbins 3½x3¾x1¼.
Atwood Winders & Spinners.
Union Specials 41200A Loopers.
Supplies for Lever—Altemus—Universal Winders.
Deisel Engine 35 HP.—cold start.
Deisel Engine 60 HP.—cold start Fairbanks Morse.

Ambler Textile Machinery Co.

S.E. cor. Bodine and York Sts., Phila., Pa.

WE OWN and OFFER FOR SALE

2—J. Hunter 8'-0" Piece Dye Kettles year 1931-2.
22—C&K 92" Veribest 4x1 Automatic Looms L. O. 12,784. 25 Harness. Motor driven.
2—D&F Sgl. Breaker Cards 48"x60" dia. Bramwell Feed. D&F #27 Garnet Breast. All Iron Const. Year 1925. Ex. Cond.
2—C&K Noble Combs, 68" Racks, Dble Dabbing Motions.
38—Fibre Roving Cans, 37½x14" dia.
1—D&F 80"x14 Roll S.A. Napper.

We specialize in Woolen and Worsted Machinery

FRANK G. W. McKITTRICK CO.

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Textile Machinery and Equipment

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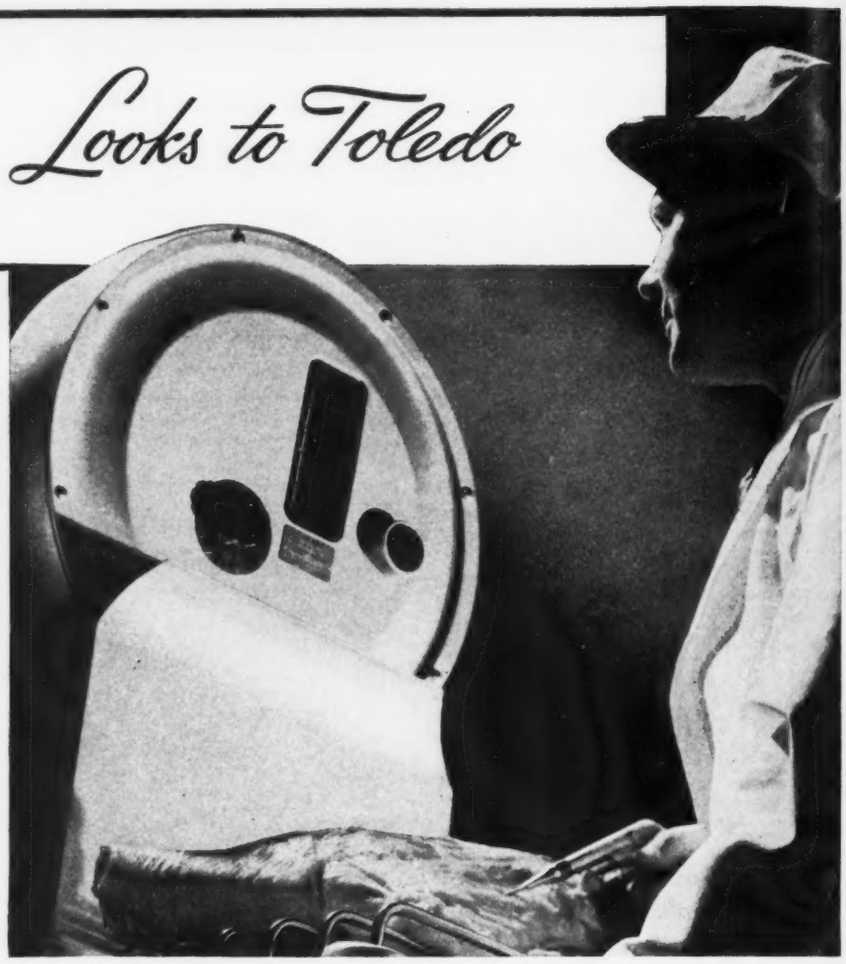

THIS is a percentage scale, Toledo-developed to solve a specific problem in curing hams.

You don't cure hams? No—but you probably use percentages in your own production. If so, the ***basic principle*** of this ham scale may help solve some of your problems, too.

Industry looks to Toledo for the solution of its tough weighing problems. And for greater accuracy and speed in its regular industrial weighing. This percentage scale is a symbol of Toledo's superior engineering knowledge and versatility. It's one of "45,000 Ways to Weigh"—and that's the title of a new illustrated brochure that you will find interesting and helpful. Send for it.
Toledo Scale Company, Industrial Scale Division, Toledo, Ohio.

TOLEDO SCALES

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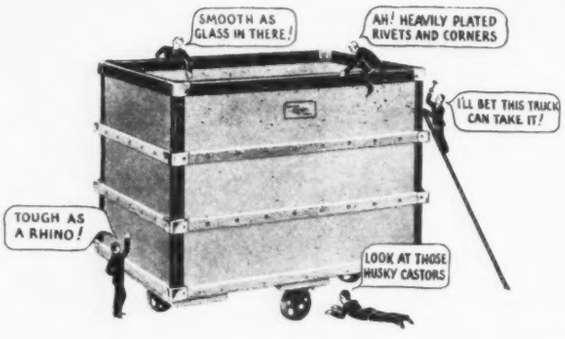
SMOOTH AS GLASS IN THERE!
AH! HEAVILY PLATED RIVETS AND CORNERS
I'LL BET THIS TRUCK CAN TAKE IT!
TOUGH AS A RHINO!
LOOK AT THOSE HUSKY CASTORS

- BOXES
- CANS
- TRUCKS
- BARRELS
- BASKETS
- TRAYS
- CASES

Diamond Fibre Trucks, and all other types of Diamond Fibre Hollow Ware, will stand close inspection from every angle. Designed from the floor up for Textile use, they effect savings for you because of their long life and freedom from repairs. Their smooth interior insures safe handling of delicate fabrics. Their sturdy construction provides stamina for a long hard life.

Diamond Fibre's EXTREME LIGHTNESS (about half the weight of aluminum) makes for easy and faster handling, less wear on floors, and less fatigue to workers.

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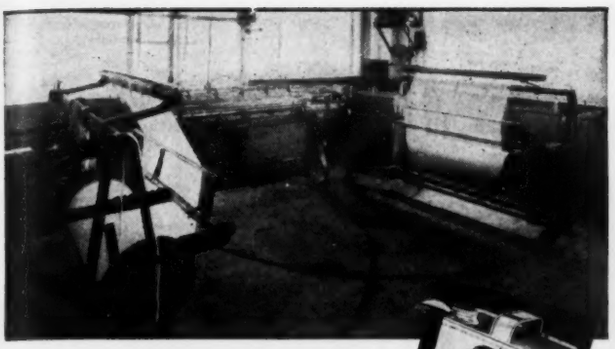
CONTINENTAL-DIAMOND FIBRE CO., NEWARK, DELAWARE

Southern Warehouse & Sales Offices, 611 South Church St., Spartanburg, S. C.—Phone 99



3-IN-ONE OIL

HELPS PROTECT WARP TYING-IN MACHINES

Textile men need no reminder of the importance of the *right oil* for small parts of the many intricate machines in the mills . . . and experienced textile men know how 3-IN-ONE Oil meets the needs of lubrication and rust prevention. You, too, will find 3-IN-ONE excellent for use on needles, reeds, shuttles, spindle pins, spindles, sewing machines. Ask for special MILL PRICES on 3-IN-ONE Oil—write us.

THE A. S. BOYLE COMPANY
Distributors — Jersey City, N. J.

"3-IN-ONE" OIL

"HALLOWELL" STEEL STOOLS

For Lifetimes of Seating Economy

In spite of their low cost, "Hallowell" Steel Stools feature advantages found in no ordinary stools. First of all, they're designed for work-producing comfort . . . they incorporate steel construction for indestructibility, and welded joints for permanent rigidity. There are models and types to fit all kinds of jobs in office and shop.

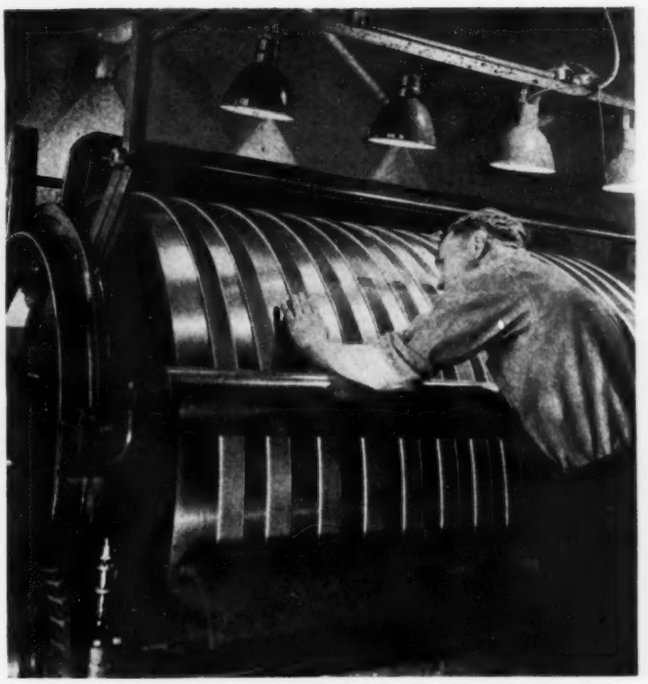
Write for our catalog and select those best suited to YOUR needs.

Fig. 1267

Fig. 1334
Pat. Applied for

Fig. 1249
Pat. Applied for

STANDARD PRESSED STEEL CO.
JENKINTOWN, PENNA. BOX 571
BOSTON · DETROIT · INDIANAPOLIS · CHICAGO · ST. LOUIS · SAN FRANCISCO



it's an Art!

The huge steel cylinder that holds WISSCO Clothing during grinding is accuracy itself. The slightest irregularity or eccentricity would cause a variation in the points. We machine and set our own grinding cylinders. The skill of the grinder is as important as the equipment he uses. Grinders in Wickwire Spencer Card Clothing Plant are men who have spent their entire lives in the various operations of making WISSCO Clothing. Their unfailing judgment as to pressure, speed and duration of grinding produces the "perfect points" characteristic of WISSCO Clothing.

Let us send you a sample of Wissco Card Clothing suitable for your use.

WICKWIRE SPENCER STEEL COMPANY
New York • Buffalo • Worcester • Chicago • San Francisco

WISSCO
Card and Napper **CLOTHING**

Send for a free copy of folder "How Wissco Card Clothing is Made". It tells why Wissco saves you money.

WICKWIRE SPENCER STEEL COMPANY
500 Fifth Ave., New York, N. Y.

Please send me samples of Wissco Card Clothing.

Name .....

Firm .....

Address .....

City ..... State..... T.W.

CUMOL TINTS

A FUGITIVE IDENTIFICATION FOR CUT STAPLE AND BLENDS

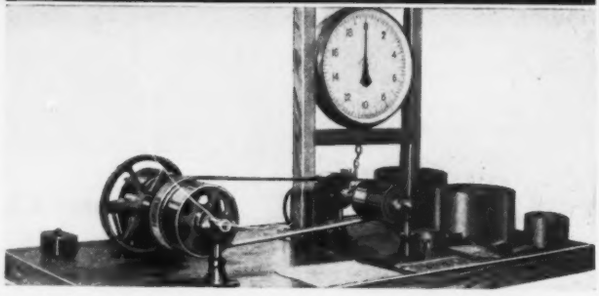
Here's an important step forward in identification tints. Cumol Tint is an oil soluble dye. Because it eliminates the use of water, Cumol Tint prevents rusting of pickers and cards . . . dries immediately, saving time. Cumol Tint is recommended for identifying spun rayons, cottons, acetates. Cumol Tint was developed by the United States Testing Company, Inc. and is available nowhere else. Sold in 5 gallon cans and 50 gallon drums.

A FUGITIVE TINT SOLUBLE IN OIL

Tints available in the following colors:
Red, Blue, Yellow, Green, Grass Green, Purple, Orange, Brown.

UNITED STATES TESTING COMPANY, INC.
ESTABLISHED 1880
HOBOKEN, NEW JERSEY
NEW YORK PHILADELPHIA GREENSBORO WOONSOCKET CHICAGO

Master Mechanics Came Saw and Ordered NONSLIP PULLEY COVERING



Scientific Test Demonstrates NONSLIP'S 350% Greater Pulling Capacity

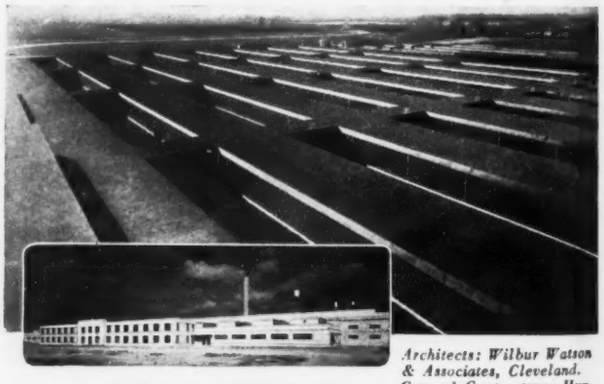
● This testing machine, exhibited at a recent convention, proved so conclusively the extra pulling power of Nonslip Pulley Covering as against plain iron pulleys that many orders were received on the spot. And since the convention, repeat orders have been coming in daily.

EASY TO APPLY

It's easy to prove the amazing pulling power of Nonslip on your own pulleys. Write today for literature and complete information. Nonslip is Unconditionally Guaranteed.

Some territory open for qualified representatives. Write for details.

NONSLIP PULLEY COVERING CO.
787 Hertel Avenue Buffalo, N. Y.



Architects: Wilbur Watson & Associates, Cleveland. General Contractors: Hunkin-Conkey Construction Co., Cleveland; Geo. A. Rutherford Co., Cleveland.

Carey BONDED BUILT-UP ROOF
Selected for
INDUSTRIAL RAYON CORPORATION

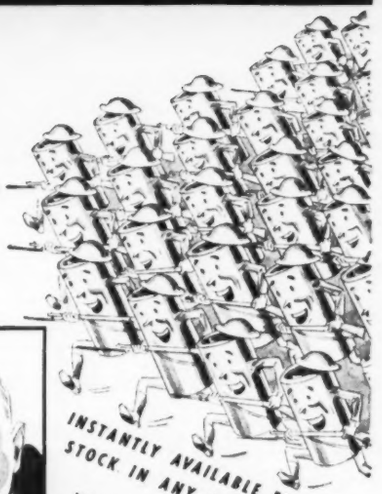
THIS ultra-modern, windowless, air-conditioned plant of Industrial Rayon Corporation, Painesville, Ohio, has been engineered for highest efficiency. To protect the building and its costly equipment, a CAREY Roof was specified, indicating the architect's confidence in CAREY'S ability to supply the best roof protection money can buy. For a building extension, increasing plant capacity 50%, a CAREY Roof has also been specified.

Sixty-seven years' experience in the manufacture of dependable building products are back of every CAREY Roof. This experience, plus the practical skill of CAREY applicators, are basic reasons why CAREY Roofs last longer, cost less per year. Write for book — "Master Specifications" — address Dept. 56.

THE PHILIP CAREY COMPANY • Lockland, Cincinnati, Ohio
Dependable Products Since 1873
BRANCHES IN PRINCIPAL CITIES

THE BEARINGS ARE *Already* MOBILIZED

● Bearings for machinery production and maintenance and for all makes of electric motors from 1/50 hp to 100 hp are already made awaiting your order. Also Tubular and Solid Bearing Bronze Bars in hundreds of sizes completely machined I. D., O. D. and ends. Write for catalog . . . The Bunting Brass & Bronze Company, Toledo, Ohio. Warehouses in all Principal Cities.



INSTANTLY AVAILABLE FROM STOCK IN ANY QUANTITY DESIRED WHEREVER YOU ARE THE BUNTING WHOLESALER CAN SUPPLY YOU

BUNTING
BRONZE BUSHINGS · PRECISION BRONZE BARS · BEARINGS · BABBITT METALS

DAVIS AND FURBER

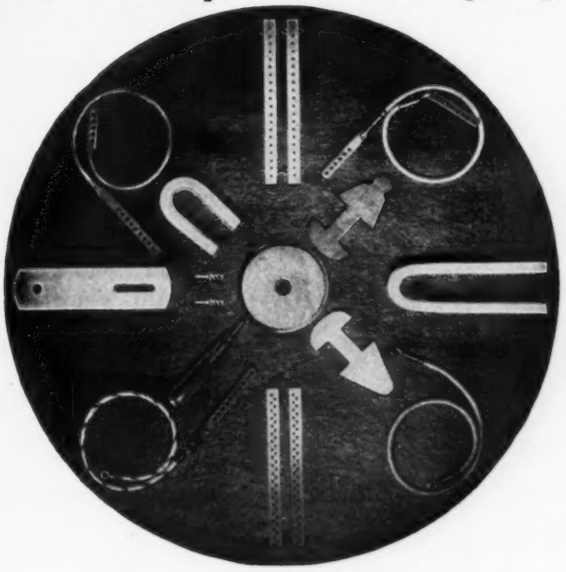
Earn a Manufacturing Profit
By Using the Best
Machinery and Supplies

DUSTERS
PICKERS
CARDS
MULES
WOOL SPINNING FRAMES
SPOOLERS
DRESSING FRAMES
NAPPERS
CARD CLOTHING
NAPPER CLOTHING
GARNETT WIRE
LEATHER SUPPLIES

DAVIS & FURBER
NORTH ANDOVER, MASS.

THE ACCEPTED STANDARD

Rice Dobby Chain Company



"Service & Quality"

MILLBURY-MASSACHUSETTS
U. S. A.

Samples on request

Southern Representative
MR. JOHN P. BATSON,
P.O. Drawer 1055, Greenville, S. C.

A Never-sleeping Force

Says a sales representative in far off Costa Rica:—

> ***"Some time ago I was requested to quote prices on various textile accessories, which on reference to a copy of Textile World was found to be made by a firm in Pennsylvania, from which firm I obtained the equipment wanted by my customer and today I represent this organization in Costa Rica."***

ANOTHER interesting example of how advertising works to bring together the man who needs equipment to help him run his mill, and the man who makes the required equipment.

And not the least interesting part of this particular incident is the fact that while the immediate contact resulted in a mutually satisfactory transaction between the mill and the equipment manufacturer, an agency connection was established at the same time which will go far toward developing additional business in that part of the world for the equipment man, and the adoption of his equipment by other mills in that locality.

The mill benefited through the advertising — more mills will benefit — the sales representative benefited and will continue to benefit — the equipment man benefited and will continue to benefit.

Advertising, in other words, is a never-sleeping force which smooths and makes more prosperous the day's work for users of goods, for makers of goods, and those men whose job it is to get the name "on the dotted line."

Which of course is why the advertising section of TEXTILE WORLD is so valuable to the alert mill man regardless of type of mill he may have, or location of his mill — to the equipment maker — and to sales representative.

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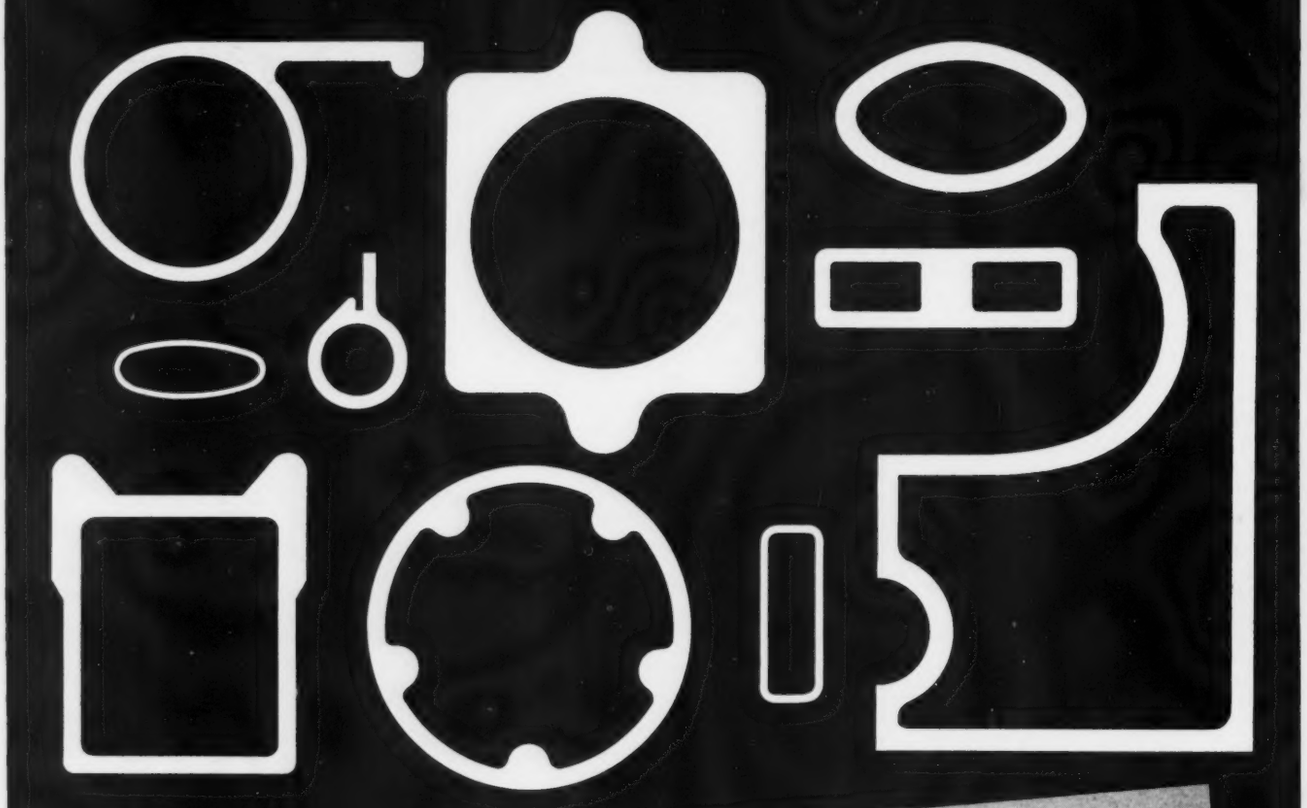
MAZLO
Reg.U.S.Pat.Off.

MAGNESIUM ALLOYS

THE LAST WORD IN LIGHTNESS



You can do things with MAZLO HOLLOW EXTRUSIONS

MAZLO hollow extrusions offer great possibilities to the designer. He can get the ultimate in lightness, while keeping a high degree of strength and sturdiness. Metal is placed exactly where it's needed; no wasteful excess.

MAZLO hollow extrusions greatly reduce manufacturing costs. Made to match the desired form quite closely, very little finishing is required. Contours not possible by other methods of manufacture are produced without expensive machining, fitting and assembly operations.

Textile machinery builders are employing hollow extrusions for parts that reciprocate at high speeds, in stop-and-go motions, and for products that must be carried about. The weight thus saved results in smoother, higher speed operation and reduced costs. May we show you how MAZLO Magnesium Alloys will help you? *Sales Agent:* Aluminum Company of America, 1705 Gulf Building, Pittsburgh, Pennsylvania.

MAZLO

AMERICAN MAGNESIUM CORPORATION

DU PONT

REG. U. S. PAT. OFF.

PEROXIDES

ALBONE*
Du Pont Hydrogen Peroxide
100 vol. Electrolytic

DFF+ SOLOZONE
(Du Pont Sodium Peroxide,
dustless and free flowing)

EFFECTIVE October 1, 1940, we are pleased to announce a substantial reduction in the price of Du Pont Peroxides: ALBONE* and DFF+ SOLOZONE. These lower prices are consistent with Du Pont's policy to reduce prices wherever possible, in order to stimulate new applications and expand the uses of its products. For new schedule of prices on ALBONE* and DFF+ SOLOZONE consult our nearest district office.

"Cavalcade of America"— back on the air — every Wednesday 7:30 P.M., E.S.T. Nation-wide Network

+Trade Mark
*Reg. U. S. Pat. Off.

DU PONT
REG. U. S. PAT. OFF.

E. I. DU PONT DE NEMOURS & COMPANY, INC.
The R. & H. Chemicals Department
Wilmington, Delaware
District Sales Offices: Baltimore, Boston, Charlotte, Chicago, Cleveland, Kansas City, Newark, New York, Philadelphia, Pittsburgh, San Francisco

ADVERTISING PAGES REMOVED

World War No. 2

Comments by Henry G. Lord

In World War No. 1, we were not worrying so much about defense, but about offense. In World War No. 2, we have a big defense job to do quickly. We are going about it with grim determination to make up for lost time. But there is not so much enthusiasm about it; there isn't the spirit of a crusade that there was in the last war, but rather the necessity of saving our skins, and underneath it all, the question of why our leaders have been so long asleep at the switch, and why we are caught in this jam.

Now, we must produce, produce, produce! Seven billions of war contracts have been let up to September twenty-fifth, said Mr. Knudsen, and it is stated that this is about one-third of the immediate program. The other two-thirds—fourteen billions more—will be let by November tenth or if possible, before election.

The part of this allocated for textile supplies represents a vast amount. These orders will be for goods that would not otherwise have been made for consumers' use, and consumers' demands from a larger number of well paid workers will still have to be met. It means plenty of business for the textile mills, at least for eighteen months, and for the machinery and supply houses.

In some lines of industry, particularly steel and machine tools, there will be lack of plant capacity, but not in textiles, I think. There will, however, be the need to utilize present capacity to the utmost by efficient management and modernized equipment. TEXTILE WORLD will feature that phase of national defense in its November issue. I have seen the program. It's fine! As I am not so close to the planning and production of TEXTILE WORLD as I was for many years, I am more conscious and critical of the good and bad things we do. I feel very strongly that the outstanding war defense job which TEXTILE WORLD is doing for the industry, its outspoken, fearless editorial recommendations of policy, its complete Washington textile war news, and its timely technical articles about the processes for war materials, are vital contributions to the efficient performance of the textile war program.

The combination of years of textile experience by an enthusiastic staff of TEXTILE WORLD men, with the unlimited facilities and backing of McGraw-Hill, makes it possible to do this kind of a war emergency job now.

HENRY G. LORD, *founder of Textile World in 1888 and president, Bragdon, Lord & Nagle Division, McGraw-Hill Publishing Co.*